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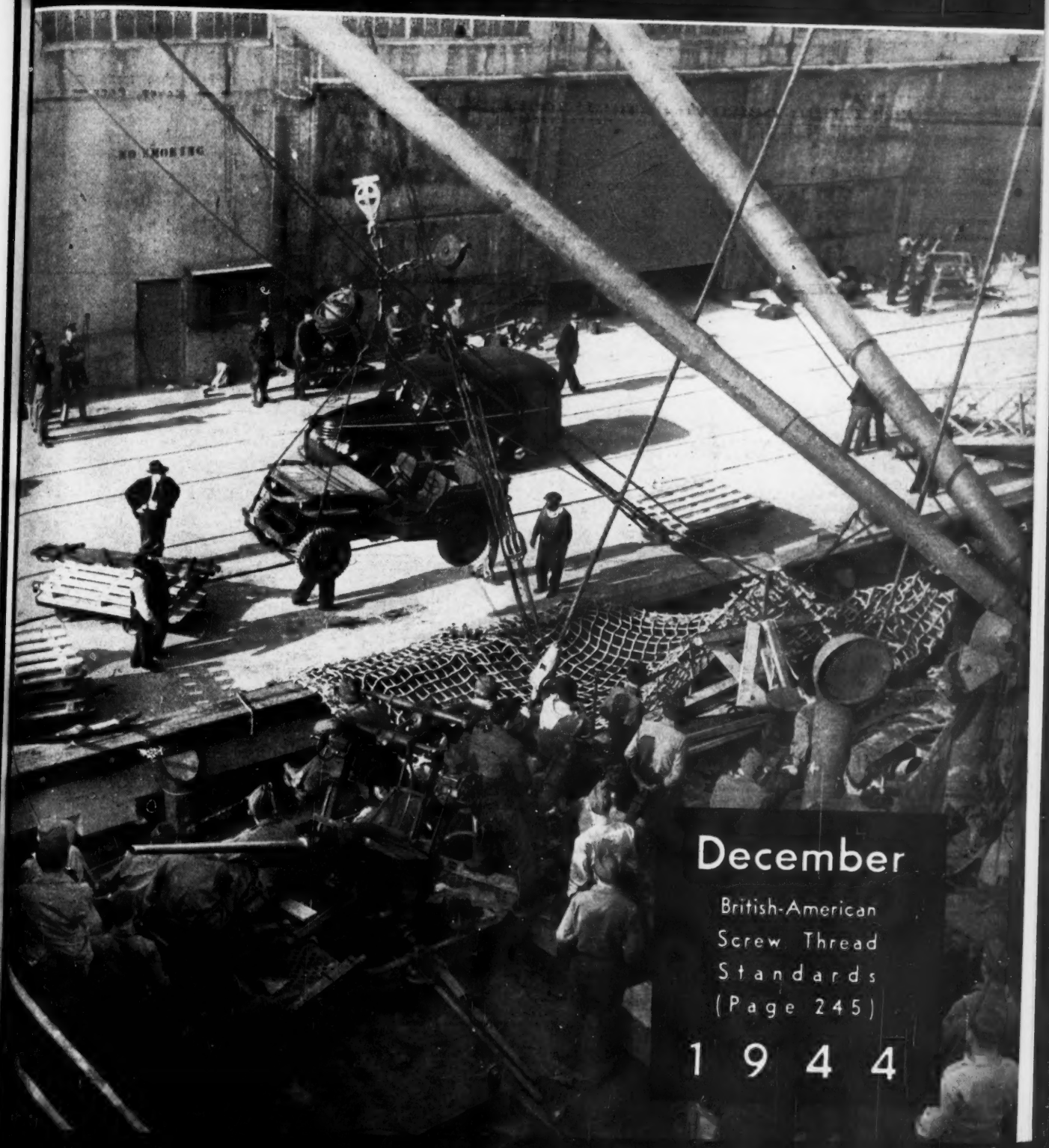

December

British-American Screw Thread Standards (Page 245)

1944

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RUTH E. MASON, Editor

Our Front Cover: Different standards for screw threads have caused difficulty in production of equipment to be shipped to our Allies. Free Lance Photographers Guild.

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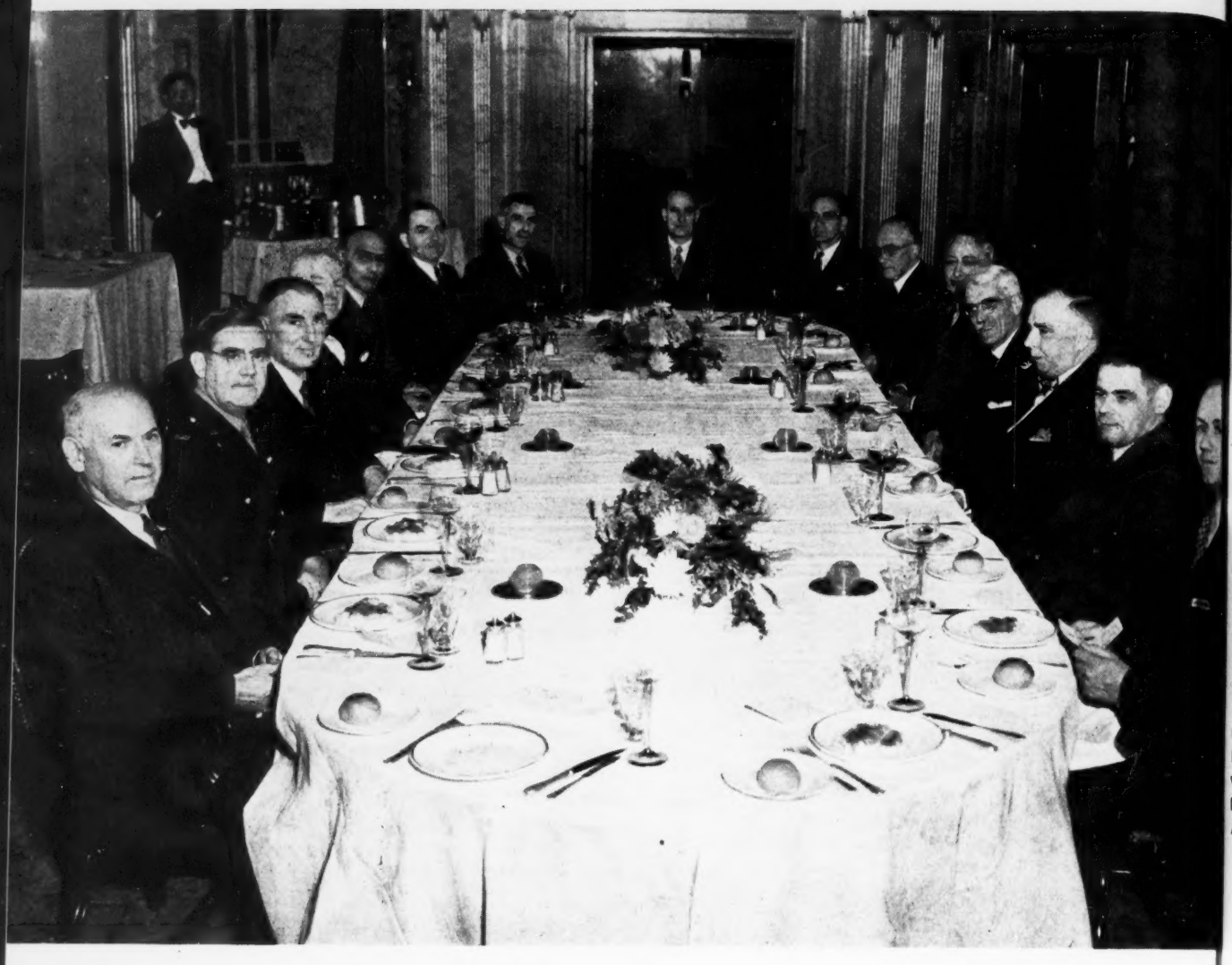


Members of the Combined United States, Canadian, and British Screw Thread Mission at a dinner meeting at the Dorchester, London, England

FROM LEFT SIDE OF TABLE, READING CLOCKWISE: *H. W. Bearce*, National Bureau of Standards; *Colonel Harry B. Hambleton*, U. S. Ordnance Department; *F. H. Rolt, MBE*, Director of Gages and Measuring Instruments, British Ministry of Supply; *J. G. Morrow*, chairman, Canadian Standards Association, and Technical Adviser to Steel Controller, Canadian Department of Munitions and Supply; *Percy Good, CBE*, director, British Standards Institutions; *F. E. Richardson*, senior engineer, U. S. Army Air Forces, The Aeronautical Board, War and Navy Departments; *H. L. Griffiths*, British Standards Institution; *Cyril Ainsworth*, assistant secretary, American Standards Association; *James Kemp*, Mission for Economic Affairs, Combined Production and Resources Board, London; *J. E. Baty*, chairman, Limits and Fits Committee of the British Standards Institution; *Neil Petersen*, chairman, Screw Threads Committee, Canadian Standards Association; *Sir William Larke, KBE*, chairman, British Standards Institution; *E. J. Bryant*, chairman, War Committee on Screw Threads of the American Standards Association; *S. J. Harley*, Controller of Jigs, Tools, and Gages, British Ministry of Supply; *Paul Des Jardins*, chief engineer, Small Tools Department, Pratt & Whitney Division, Niles-Bement-Pond Company

British-American Missions
Work to Unify Screw Thread Standards

CANADIAN and United States members of a mission on screw thread standards which has just returned from London reported to American industry at a meeting November 16 at the Engineering Auditorium, New York. The meeting was under the auspices of the American Society of Mechanical Engineers, the American Standards Association, and the Society of Automotive Engineers.

The reports showed what steps are being taken to unify British and American practice with regard to manufacture of the threaded parts that keep our war equipment rolling. These include component parts of jeeps, tanks, trucks, gun carriages, gun parts, all kinds of instruments, and thousands of other items of essential war equipment.

At least $100,000,000 has been added to the cost of the war because of different standards for screw threads in the United States and Great Britain, it is estimated. As a result, work toward international agreement was undertaken at the request of the Combined Production and Resources Board, when a British mission visited the United States in 1943. Arrangements for these conferences in New York were made by the American Standards Association.

To carry the work further, the joint Canadian-United States mission visited London in August of this year. Arrangements for the London conferences were made by the Ministry of Production and the British Standards Institution.

Stanley J. Harley, Controller of Jigs, Tools, and Gages, acted as chairman of the British delegation, and Percy Good, Director of the British Standards Institution, was vice-chairman.

Elmer J. Bryant, Greenfield Tap and Die Corporation, was chairman of the Canadian-United States Mission, and James G. Morrow, chairman of the Canadian Standards Association, was vice-chairman.

Robert M. Gates, president of the Air Pre-Heater Corporation and of the American Society of Mechanical Engineers, was chairman of the November 16 meeting at which the delegates presented their reports. William L. Batt, vice-chairman for International Supply of the War Production Board and United States member of the Combined Production and Resources Board, which sponsored the Mission, was guest speaker.

Abstracts of the speeches and the technical reports are presented here for the information of ASA Members.

How British and American Screw Threads Differ

by Robert M. Gates[1]

Chairman of General Meeting of American Industry November 16

A JOINT United States-Canadian Screw Thread Mission recently conferred in London with British representatives on the unification of screw threads and other related standards. It is my conviction that these discussions, although not spectacular in the usual newspaper sense, mark an important step in bringing about a better understanding between the three countries on engineering problems that have caused serious difficulties in the production both of war materiel and of our normal peacetime products.

Ever since England and America first embarked on what history now calls the industrial age, these two countries have designed their screw-threaded parts in accordance with their own particular—and unrelated—practices.

It was in 1841 that Sir Joseph Whitworth, carrying on the correlation of screw thread forms initiated by his fellow countryman, Henry Maudsley, offered the first standard form in England. Prior to this time, screws were made by skilled craftsmen in accordance with their own individual designs, so that no two screws were necessarily alike. Because of this practice, it was almost impossible to replace a screw once it was lost or broken except by a laborious and generally inaccurate hand process.

America was rather far removed from the industrial trends of England a century ago. We had here men who were used to working out their own problems in a typically American fashion. While we in this country were not unaware of the industrial developments across the water, our early engineers had ideas of their own. So it is not surprising to find, in 1864, William Sellers presenting before the Franklin Institute in Philadelphia recommendations for a standard screw thread form for use in the United States. Mr. Sellers offered his standard as an improvement over the Whitworth form and

[1] President, Air Pre-Heater Corporation; President, American Society of Mechanical Engineers.

Robert M. Gates

President of American Society of Mechanical Engineers was chairman of meeting on screw threads in the Auditorium of the Engineering Societies Building, New York, November 16.

gave rather precise reasons for his recommendations. It is the basic difference between the original Whitworth form and the Sellers' thread initiated almost a century ago which is today the root of our difficulties.

While the subject of screw threads is highly technical in detail, the fundamental differences between United States and United Kingdom standards can be explained by the fact that one still employs an angle of 55 degrees, the other a 60-degree angle. Also, one is designed with threads of rounded tops and bottoms, the other with flat tops and bottoms. In recent years, due to the accelerated rate of mechanical design, there has been a decided trend on the part of engineers in both countries to improve screw thread designs. Hence the wide differences mentioned above are now somewhat modified due to the fact that we in the United States are recognizing the virtue of a rounded bottom whereas the British are finding advantages to the flat top. We might say, then, that the major difference occurs in the angle employed for the thread.

Whitworth Thread

Sellers Thread

In 1918, the Congress of the United States found th inadequate national screw thread standards made th obtaining of large quantities of war equipment a ser ous difficulty and, therefore, took quick action to ap point a national screw thread commission to invest gate and promulgate the development of standards i this field. Members of the Commission at the sam time explored the matter of screw thread standard with British and French engineers. But while nothin was accomplished in the international field, the effor of the Commission did result in the development o national standards by American industry. Since tha time the program has been continued for the gover ment by the Interdepartmental Screw Thread Com mittee and on a national basis by the American Stand ards Association.

During the last two decades sporadic attempt by interested groups in England and America wer made to effect a unification of screw thread standard but it was not until the advent of the present war tha vigorous steps were taken to discuss the possibilities o resolving the differences in screw thread specification

Combined Production and Resources Board Invited British Mission

A little over a year ago, at the invitation of th Combined Production and Resources Board, the Britis Ministry of Production sent a technical mission to th United States. For the first time, after many lon years, there appeared a ray of hope that it might b possible for the two countries to resolve their differ ences in screw thread practice.

So it was with a great deal of enthusiasm that th engineering societies of the United States, working i collaboration with those of Canada, studied the tech nical details of screw thread design with a view t obtaining a better understanding with British enginee ing societies. During the early part of this year var ous technical committees met and developed draf standards in anticipation of another international con ference.

Last spring the United States indicated that it wa ready to resume discussions with the British, and, i August, a joint United States-Canadian Screw Threa Mission departed for London. There, for over month, sometimes working in bomb-proofed meetin rooms, but more often in spaces exposed to the danger of the flying bombs that came over in almost unend ing stream, screw thread engineers of the three coun tries labored to achieve uniform standards.

Report of Conferences Now Available

A summary report of these conferences was pre pared and submitted to the Combined Production an Resources Board in Washington, the sponsors of thi mission.

Because this report is of such vital concern to th professions and industries concerned with the desig and production of screw thread parts, the report ha been published, and is now available both in the Unite States and Great Britain.[2]

[2] *Report of Conferences on Standardization of Screw Threa and Cylindrical Fits,* published by the Combined Production an Resources Board; also available from the American Standar Association.

International Standards Aid World Cooperation In War and Peace

by William L. Batt

United States member on the Combined Raw Materials Board and the Combined Production and Resources Board; vice-chairman of the War Production Board; president of SKF Industries.

WHILE screw threads may seem to be a rather simple and workaday matter to the average man, the fact is that our whole machine-age economy is held together by screw threads.

Before the war it was a mild sort of joke to tell about the man with the $20,000 Rolls Royce marooned for two weeks in Dubuque waiting for a ten-cent machine screw that, except for the fit of the screw threads, he might have obtained in the nearest hardware store.

I do not know whether such pre-war episodes had any consequential bearing on anything except international tempers; but I do know that screw threads have raised any number of complications with our Allied production during this war. British and American gun parts—or parts for other items—in many cases are not interchangeable even though the completed products themselves are of identical design. American ships, put in at foreign ports for repair, have been delayed because replacement parts for hose connections, for example, could not be found to fit. Can you picture the vast stocks of duplicated replacement parts we have been forced to maintain in the far-flung war theatres simply because our screw threads are different? And can you visualize the problems of American manufacturers producing for British orders to British specifications?

Lack of Screw Thread Unification Has Already Cost $100,000,000

When at the outbreak of the war the British came to this country to contract for equipment, a tremendous capital investment had to be made for tools and production equipment so that American manufacturers could produce to British specifications. Ordnance engineers responsible for seeing that our Allies receive quickly the quantities of materiel they need tell me that it frequently takes three times as long to get British-type tools and gages for producing to British specifications as it does to get American, and in many cases the price is three times as high. Lack of unification of screw threads has already added $100,000,000 to the cost of the war, it is estimated. In wartime such a situation is intolerable. I hope that we will not have another war, but if we do, we run the risk of unforgivable delay if our production is again seriously slowed through lack of unification of screw threads. The ending of this war must not leave this problem unsolved.

As Mr. Gates has explained, the dissimilarity between screw threads of Great Britain and the United States has had a long history. As he has also explained, the difficulties have centered around the fact that Whitworth's thread had flat sides at an angle to each other of 55 degrees, and with rounded tops and bottoms, so that a cross section gave a hill and dale appearance, whereas Sellers' thread has an angle of cut of 60 degrees, with flat, or truncated, roots and crests. This was deemed to have certain advantages in manufacture, simplification, and in service, so came to be generally adopted in American industry. So it was that World War II approached with the largest single producing country confronted with the almost impossible task of manufacturing tremendous quantities of equipment to different screw thread specifications.

The difficulties were immediate. American manufacturers found they required new taps, dies, and gages, when they produced goods for the French, British, and Russians.

One of the sharpest problems involved the rounded top of the screw threads, the requisite tools being very difficult to obtain. To overcome this, Army engineers evolved a form of truncated Whitworth design, which is to say, a thread having rounded root but flat top. This found acceptance in Britain, and so the truncated Whitworth screw thread is already a widely used standard in war production.

Long-Range Problems Remain to be Solved

But the problem was not only on a level of expediency. Many fundamental and long-range problems remained. So, under the sponsorship of the Combined Production and Resources Board, the American Standards Association invited a mission to come from Britain to explore avenues of cooperation. The meetings were held here in New York. And this autumn a CPRB joint United States-Canadian mission visited London at the invitation of the Ministry of Production. The present situation as to progress of these talks is encouraging and many problems have been resolved.

We thank these men who went to England in wartime. They took their lives in their hands just as much

as the military men risk theirs for the success of the war. It is a satisfaction to us who are responsible for the arrangements for these missions to have as conspicuous success as has been shown by this mission.

International cooperation in such subjects as standardization of screw threads, important as it is, however, is only one part of the world problem. Cooperation between engineers around the world has not been too uncommon in the past. But agreement on the political and economic front is much more rare. It is a happy thing that interest in world cooperation in the United States seems to be steadily growing. The platforms of both political parties leave no doubt that the people of the United States are determined that we shall participate in world affairs in the future. The missions on special subjects between the Allies, the international relief organizations, the Bretton Woods conference, the Dumbarton Oaks conference, not to mention the meeting on petroleum, the air conference, and the international business conference, all are the threads of the fabric that are slowly being woven, and that promise to tie the world more closely together. They point to the recognition throughout the world, and more particularly on the part of the United States, that no longer can the nations of the world go ahead separately, with no agreement.

Failed to Recognize Economic Revolution

After the end of World War I we failed to recognize that we were in the midst of a real economic revolution, the greatest this world has ever seen—when all the rest of the world became our debtor. We thought of debt as something that anyone could pay off if he wanted to, and went ahead just as we had before trying to collect from the countries that owed us. At the same time we constantly built up restrictions against imports. As a result, there was no way the world could get itself out of debt. Finally, we drifted into depression. Our entire policy made Germany ripe for Hitler, and I even venture to say that without our depression Hitler might not have come to power in Germany.

The peace of the world cannot be guaranteed by armies and navies. For a peaceful world we must have a good world economic situation; but we cannot have it unless the United States takes a greater part in the economic life of the world.

We never have been able to understand that whenever we want to export goods we must also import goods. Any economist would have a hard time explaining how we can obtain full employment in this country without both substantial exports and imports. Despite suggestions to the contrary, I believe imports need have no harmful effect on the American worker, but would undoubtedly have a salutary effect in keeping down prices of American goods.

New Economic Relationships for U. S.

The United States must assume a new economic relationship to the rest of the world that must involve every peace contact on every economic front. We must learn the language of foreign dealings. We are a part of the world. That this is being recognized is indicated in the fact that American delegates to the international business conference at Rye have declared that the United States must take the lead in reducing tariffs and trade restrictions. Another indication is contained in a statement made by Alf M. Landon recently, when he said, "The Republican party can no longer be a party identified with a high tariff policy." Within the walls of non-cooperation lie depression and world scarcity. World cooperation means a busy economy. Goods bought and sold both within and without our borders means an economy of fullest possible employment.

International cooperation on technical standards is one of the means toward that busy, cooperative economy.

U. S. War Equipment Assembled in Great Britain

"Can you picture the vast stocks of duplicated replacement parts we have been forced to maintain in the far-flung war theatres simply because our screw threads are different?"

The United States Government has a keen interest in this question. We recently asked high-ranking officials of the Army, Navy, the Aeronautical Board, the United States Maritime Commission, and the State and Commerce Departments, to tell us what their answer would be to the question, "Does the U. S. Government consider the unification of British and U. S. screw thread standards vital to its future military preparedness and peacetime economic prosperity?" I was gratified to find that they were unanimous in their opinion that the unification of screw thread standards should be vigorously pursued.

Screw thread standardization should proceed as promptly as possible to a satisfactory settlement. It is not the job of the government to do this. The agencies of the government can design whatever they want but it is up to industry to build it. This screw thread standardization is a job for industry. The meetings held here and in Europe have been intended only to place ideas before the governments involved, not to bind them to action. The round table procedure is a procedure to find the facts and from the facts to determine what is the wisest policy to follow in the interest of all concerned.

Screw thread standardization is a "must" for industry. The Combined Production and Resources Board is a wartime agency. During the time it exists it will do whatever you want in arranging meetings, but it cannot carry this job through to its conclusion. That we leave to you.

What the Screw Thread Mission Accomplished

by Elmer J. Bryant

Vice-Chairman, Joint United States-Canadian Screw Thread Mission

THE field of screw thread design is of a highly technical nature. This report, therefore, will give but the briefest of summaries necessary to judge the progress that has been made in our recent international discussions.[1]

The Joint United States-Canadian Mission which visited London in August and September was made up of eight members. The representatives included, in addition to myself:

Cyril Ainsworth, American Standards Association
Paul J. Des Jardins, Pratt & Whitney Corporation
H. W. Bearce, National Bureau of Standards
Colonel H. B. Hambleton, War Department
Frank E. Richardson, Aeronautical Board
James G. Morrow, vice-chairman of the Mission and chairman of the Canadian Standards Association
Neil Petersen, president, Canadian Acme Screw and Gear Company

I cannot speak too highly of the hospitality extended the members of our Mission, or of the spirit of cooperation that was evident in all our discussions.

Following is a summary of the subjects discussed and the conclusions reached.

Screw Threads of Truncated Whitworth Form—

American industry has experienced considerable difficulty in its endeavor to produce British Standard Whitworth screw threads required for British war materiel. Our manufacturers, being equipped primarily for the production of U. S. national screw thread forms, found it difficult to procure and maintain the taps, dies, and gages essential to the manufacture of the British thread form. Manufacturers in the United States found the production of rounded top threads particularly difficult and to follow this specification a costly tool set-up was not only necessary, but the tools were, in almost every respect, difficult to procure.

Army Ordnance engineers, in order to overcome this difficulty, developed a system of threads of truncated form designed in such a way that the components provided with these threads could be interchanged with components having full-form standard Whitworth threads. The outstanding features of this Army thread system was the elimination of the rounded top in favor of the truncated, or flat, top.

This truncated Whitworth thread proved of such value to American manufacturers in overcoming the difficulties of production they had encountered that the War Production Board requested the American Standards Association to develop a war standard based on this system. It was this American War Standard[2] which the Screw Thread Mission discussed with the British in order that the two countries might be in agreement.

The British delegation at the conferences made certain recommendations for the revision of the American War Standard and steps have already been taken in the United States to conform.

With these revisions the American War Standard will be acceptable as a specification for the production of truncated Whitworth threads and will fully interchange with the full-form Whitworth thread produced in accordance with British standards.

Buttress Threads—

This type of thread has certain advantages in applications involving especially high stresses along the thread axis and in one direction only. The buttress thread is widely used in applications such as the breech mechanism of large guns, airplane propeller hubs, and in fastening of armor plating.

None of the countries—that is the United States, United Kingdom, or Canada—had developed an accepted standard practice for buttress threads. Consequently, manufacturers had been plagued with poor specifications.

A general agreement was reached, in these conferences, on the principal elements of buttress thread specifications and a draft is now being prepared with a view to obtaining the early publication of a common standard by the three countries.

Instrument Screw Threads—

The term "instrument screw threads" is used to designate screw-threaded parts used in the manufacture of fine and

[1] More detailed reports on each subject, presented by other members of the Mission, are given on pages 252-256.
Action taken by ASA War Committees to put the Mission's reports into effect are shown on page 256.

[2] American War Standard Screw Threads of Truncated Whitworth Form, B1.6-1944.

Elmer J. Bryant

Direct of Research, Greenfield Tap and Die Corporation; chairman of ASA Sectional Committee on Screw Threads, B1; chairman of ASA War Committee on Screw Threads.

delicate mechanisms, such as watches, clocks, electric measuring and recording devices, and aircraft and optical instruments.

Up to the present time individual manufacturers have generally made their own taps, dies, and gages. There is, therefore, a wide variety of sizes, pitches, and thread forms in common use. Such a variety of instrument screw threads in normal times makes repair and maintenance of delicate devices a difficult and costly problem; in time of war it becomes a serious difficulty. It makes mass production of instruments difficult; it seriously handicaps military operations in the field due to the difficulties of making repairs.

This subject was discussed at some length in London with the result that considerable progress was made toward setting up a series of thread sizes and pitches which may form the basis for a standard common to the three countries.

Pipe Threads—

This subject must be considered as one of our major problems in the matter of international standardization.

Pipe threads are used for a wide variety of applications, most common of which include plumbing and heating installations, and fuel, gas, and lubricating lines. The use of pipe threads is so universal that standards set up on uniform specifications are extremely desirable not only for purposes of war production but also for use during the period of reconstruction in Europe.

While British and American pipe-threading practices are such as to make the development of a uniform standard difficult, it was agreed to pursue the possibility of coordinating the smaller sizes of pipe threads. In addition, the British will consider the development of a standard for American taper pipe threads for sizes above 4 in. in diameter.

It was also agreed to exchange data on electric-conduit thread practice with a view to studying the possibilities of developing a common standard.

Screw Threads for Compressed-Gas Cylinder Outlet Threads—

The widespread use of bottled gases for industrial use and the need for gas equipment in every theatre of operations made it necessary that serious study be given to the threaded parts used for connections. These gases include acetylene, carbon dioxide, ammonia, chlorine, helium, hydrogen, nitrogen, nitrous oxide, oxygen, freon, and methyl chloride. These gases are bottled under pressure and must be retained by means of a valve connection at the outlet of the cylinder. It is in connection with these valve outlets that a serious difficulty arose due to the fact that no uniform practice of screw thread connections had been established. Furthermore, due to the differences between the British and American thread forms, the use of American-made gas cylinders with British equipment was difficult.

While the possibilities of developing a common standard are still somewhat remote due to the complication of varying thread forms, it has nevertheless been agreed to complete and exchange standard data sheets in order that the three countries may have the best available data. These data sheets are to be prepared for 11 gases and will include complete specifications for the adaptors required for each type of gas.

High-Duty Studs in Light Alloys—

Due to the difference in aluminum or magnesium alloys used in the construction of cylinders and crank cases, each engine manufacturer has developed his own design of stud and thread hole to different dimensions. The Army Air Force as well as the Royal and the Canadian Air Forces have all had to carry a line of over-size studs for each make and model of engine. In view of the wide dispersion of aircraft, this problem is clearly an international one and there is little question but that some agreement on uniform practices must be obtained if repair at remote bases is to be readily accomplished.

As a result of the discussions in London it was agreed that the United States should prepare and circulate a war standard for stud fits. Canada will then issue a corresponding standard.

Acme Screw Threads—

These screw threads are extensively used in a wide variety of machine tools, lifts, jacks, control mechanisms for aircraft, valves, ordnance, and in other war equipment.

As a result of the discussions, the British approved of the proposed American War Standard for Acme Threads, with a few minor amendments. They suggested, at the same time, that the American Standards Association should develop a corresponding standard for stub Acme threads. Thus, in the matter of Acme threads, a very satisfying degree of unification may be expected.

Cylindrical Fits—

While this subject should not be confused with screw threads, it has a direct relation to screw thread design. It deals with the specification of the character of fit between cylindrical mating parts, such as plane shafts and bearings. Due to the fact that there is not available a universally recognized series of preferred sizes, tolerances, and allowances, or even a symbol of systems for expressing dimensions in definite and convenient form, much time and effort has been wasted in the design of equipment for mass war production.

On the basis of the exchange of data, the British agreed to prepare and circulate a draft specification for the consideration of the appropriate bodies in the three countries.

Design and Drafting Practices—

This subject was brought to the attention of the Mission during the discussions of Limits and Fits for Engineering because of the difficulties experienced when plants were required to work to drawings other than their own, and especially when not of their own country. There is a lack of information on drawings regarding the accuracy required on details and important features that affect interchangeability, particularly symmetries and positional features.

The practice used at the Royal Naval Torpedo Factory, and presented by C. A. Gladman of the National Physical Laboratory because he was intimately connected with the development, was considered of such general interest that he was asked if it would be possible for him to present a paper[2] on the subject be-

[2] This paper is being preprinted by the Society of Automotive Engineers, in collaboration with the American Society of Mechanical Engineers and the American Standards Association. Copies may be ordered, without charge, from the ASA for delivery when available.

fore our engineering bodies. Arrangements are being made for Mr. Gladman to present his paper at meetings of the Society of Automotive Engineers and the American Society of Mechanical Engineers.

A unified practice in this field would make for a better understanding in the three countries of technical drawings necessary to the war effort and peacetime operations.

Unification of British and American Threads—

The final sessions of the London conferences were devoted to discussions of the unification of British and American screw thread practices. This subject is of vital importance to both the government and private industries of the three countries. James G. Morrow, vice-chairman of the Mission, presents below the story regarding our discussions on this subject.

It was the consensus of the London conferences that proper steps should be taken to insure the continuity of the work in this field in order that there might be maintained a complete understanding between the three countries on screw thread practices and related subjects. It was the view of those who attended the conferences that the most appropriate means to insure this is to charge the recognized standards bodies of the three countries to see to it that the work is carried on in this important field. It is my conviction that we in America should take an active interest in the development of international standards in this field in order that the unfortunate differences, initiated many decades ago, may finally be resolved to the lasting benefit of American industry both in peace and in war.

A Program of Unification For British and American Screw Threads

by James G. Morrow

Vice-Chairman, Joint United States-Canadian Screw Thread Mission

WE of America—you in the United States and we in Canada—have realized at various times and in many ways the need for *unification*. You carried out the unification of your various states; we had confederation of our provinces. Unification, therefore, is not new to either of us; neither is it new to Britain. We are all well versed in its application in each of our respective countries. Now comes a fuller conception of it. We three nations are blest with common ideals and a common language—the basic fundamentals for a proper approach to this or any other international problem. We who possess these natural facilities can approach a unification program between our countries in a direct, simple manner with the object of making identical those things which are in common use but which are not now quite the same in each of our countries.

What Unified Practices Can Prevent

The great airport at Prestwick, Scotland, recently provided an illustration of what unification can *prevent*. A splendid 4-motored plane, with full crew and passenger list, swept majestically in from across the Atlantic for a landing. A slight difference in field lighting there confused an able pilot who, when only a few feet from the ground, endeavored to take his ship up again, and lost her and all on board. Unification in many fields is awaiting our consideration and our action that we may save life, time, and materials.

Our joint mission dealt with screw threads which are vital to every machine part. Unification of screw threads will mean much ultimately, in the reduction of stores and replacement parts, to our fighting forces in their far-flung theatres of action. It will mean much in manufacturing equipment for these forces. Appropriate action must be taken to carry unification to completion for them as soon as possible, and later, and in due course, for industry. In two wars, the United States and Canada have both produced two different thread standards and gaging practices. Now we are taking the first steps in "reasoning together" in arranging the parts to one purpose.

In our discussions before the mission departed from this side of the Atlantic, it was planned to leave the subject of "unification" to the last on the program—but to our surprise our friends over there brought it up at our first meeting. This, to us, indicates their sincerity and desire for all-out cooperation.

Their approach to the subject was direct. They pointed out that the United States' form of thread had successfully served industry in the United States for more than sixty years, and they would be the last to suggest to our mission that this form of thread was not satisfactory. Likewise they assumed that as the Whitworth form of thread had met their needs in England for about one hundred years, we, of the joint mission, had not come to London to suggest that their form of thread was wholly unsatisfactory, even though it had been found troublesome by American and Canadian manufacturers. One can but conclude that if there is anything radically wrong with either form of thread it would have shown up long since in production or in service.

Solution on Practical Basis

So it was considered that this was an opportune time to clear the air of all so-called theory and theoretical argument not backed up by practical demonstration, and also to make a clear statement of what should be the ideal solution.

Lengthy discussions of technical details developed the need for a research program, so that before any changes were recommended we should have fuller knowledge for better judgment.

To this end a committee was appointed of representatives of all our countries, to plan, direct, and carry out a research program which would indicate the optimum thread form to be recommended as a basis for a future Anglo-American-Canadian specification.

To Study Results of Research in 1945

The results of the first phase of the research program will be examined by the joint delegates in the early part of 1945. This phase is to be carried out in the shortest possible time and is to determine a trend and to establish what additional research is necessary and proceed to carry it out. It was also decided that when the ideal thread form had been established serious consideration should be given toward a simplification of the existing thread series. It was also agreed that the American unification proposal should be reviewed to determine the possibility of its use as a short-term standard during the remainder of the war and the early reconstruction period.

Consideration was also given to a proposal that during the remainder of the emergency period threads for new ordnance design should be made according to the American proposal for fine threads, and to the Truncated Whitworth thread standard, which had been mutually agreed to for coarse threads. It was considered that the following of such a policy might not be entirely practical because of difficulties of interchangeability requirements with present products.

It was further agreed that the American proposal would be enlarged to include coarse threads, fine threads, and special threads, and following its approval by American industry it would be published as an American War Standard by the American Standards Association. Also, it was agreed that the British would publish the standard through the British Standards Institution as a British emergency specification. Canada will likewise publish it as a Canadian standard. This specification would include the full data on gages and gaging methods in accordance with American practice.

James G. Morrow

Chairman, Canadian Standards Association; Canadian representative on Administrative Committee on National Emergency Steel Specifications, WPB; Technical Advisor to the Steel Controller, Department of Munitions and Supply, Ottawa; head of Technical Advisory Committee of Alloy and Special Steel Control; metallurgical engineer, Steel Company of Canada; vice-president, Atlas Plant Extension, Ltd.

The Canadians have extended a cordial invitation to hold the next session in an appropriate location in Canada and at a suitable time.

It is sincerely hoped that the conferences are but the first of many more to come; and that in this meeting together of our technical and industrial representatives for unifying our standards and other similar purposes we shall ultimately create a better condition of life for our peoples. We can lead the way, in fact it may truly be said that it is our duty to lead the world in this work.

Technical Reports

At the November 16 meeting, the member of the Mission who was particularly concerned with each of the subjects considered by the conferences in London reported on the results of the conferences as they affected his special subject. The name of the member reporting is given here following the title of his report. Meetings were held by the ASA War Committees on these subjects following the November 16 meeting. Action taken by these committees is reported on page 256.

Truncated Whitworth Threads

Colonel Harry B. Hambleton

Ordnance Department, ASF

The main difficulty experienced in America in the production of the British Whitworth form of thread concerned the rounded crests and roots, involving special tooling problems that do not arise in connection with the American National form of thread. The delegation from the United States presented an American War Standard specification on Truncated Whitworth Threads which provided information as to the form of thread and tolerances for the threads of the truncated Whitworth form in the Fine, Coarse, and Parallel series. Tables were also included for the tolerances on special truncated Whitworth threads where the diameters and pitches do not fall within the series referred to above.

The British delegation was generally in agreement with this specification except as regards the flat roots included in the American War Standard. The Canadian and the United States delegations agreed to the British recommendation that the roots should be rounded in order to withstand fatigue and agree with the latest practice of production by rolling. They also agreed

that the same designations (Coarse, Fine, Parallel, and Special) should be given to truncated Whitworth threads in the three countries.

The gaging practice included in the American War Standard was based on the principle that gage tolerances of the inspection gages should be located within the tolerance zone of the product. In the British practice, the tolerances on inspection gages are sometimes placed outside the product limits of the work to insure that no work made within the tolerances would be rejected. In the discussion which took place on this difference in gaging practice, it was appreciated that truncated Whitworth threads made in America and accepted by American inspection gages would also be satisfactory to the British inspection system and would, therefore, be interchangeable with threads produced in Great Britain. On this basis, it was agreed that the American gaging practice as provided in the American War Standard, B1.6-1944, should stand, as product passed by this practice would always be accepted by British inspection gages with wider limits.

The American committee were congratulated on the extremely able way in which the American War Standard had been drawn up and presented. It was pointed out that the British and American committees were already in substantial agreement upon the major features of the standard and that the points of divergence were covered by British Standards Institution document CG 7241 (which is in substance an advance notice of revision of their formal standard). The British delegation agreed that the Screw Thread Committee of the British Standards Institution would, as soon as possible, publish an amendment to British Standard Specification 84 on Whitworth Screw Threads which would provide British industry with the latest approved information regarding the truncated form of the Whitworth thread.

Buttress Threads

Henry W. Bearce

National Bureau of Standards

Data on the types of Buttress Threads used in Great Britain and the United States had been collected with the view of investigating the possibility of establishing a common standard for this form of thread. This enabled the delegates from both countries to present proposals to the London Conference.

In the proposal from the United States, the form of the thread had a 7-degree angle for the pressure flank, a 45-degree angle for the back flank, flat crests on the screw and nut, having widths of one-eighth and one-quarter of the pitch respectively, and suitably radiused roots.

The form of thread proposed by the British delegates, which was based on a mathematical investigation of the resistance of the thread to combined bending and shear under load, had flank angles of seven and one-half and forty-five degrees, flat crests of equal width on the screw and nut, and cleared, radiused roots with a depth of engagement equal to 0.4 of the pitch.

It was finally agreed that the accepted form should be in accordance with the British proposal, but with a 7-degree angle for the pressure flank. The conference recommended that the British Standards Institution be requested to formulate a draft standard on the agreed lines and to include recommendations for the relationship of pitch to diameter, tables of clearances and tolerances, and recommendations relating to gaging practice. It was also agreed that the draft of such a standard be submitted to the American and Canadian Standards Association for review by their respective committees.

Pipe Threads

Elmer J. Bryant

Chief Engineer, Greenfield Tap and Die Corporation

A proposed revision of the American Standard for Pipe Thread, B2.1-1942, was presented to the conference for consideration as a basis of unification. The British delegation offered a number of comments on this proposal and mentioned that British Standard pipe threads up to four inches in diameter are extensively used on the continent of Europe. Considerable confusion would result if any change were made in British Standard Specification No. 21, they declared. On the other hand, for sizes above four inches, in view of the considerable production in the United Kingdom of American Petroleum Institute Line Pipe threads, on oil country goods, with which the proposed new American Standard for Pipe Thread is now in line, it was considered that the use of the British specification might be discontinued in due course. With this possibility in mind, it was agreed that the British would consider the formulation of a standard for these larger sizes based on the American Standard. It was also agreed that the possibility of coordination of the American and British Specification for the four-inch diameter and smaller should be pursued.

Outlet Valves of Compressed-Gas Cylinders

Colonel Harry B. Hambleton

Ordnance Department, ASF

The difficulty of using American-made cylinders containing compressed gases with British equipment, due to the differences in types and sizes of threads adopted in the two countries, is being overcome by means of adaptors. The London conferences brought out the fact that it would be impossible at this time to take any steps toward a unification of the types and sizes of threads.

In the interim between the American-British-Canadian conferences in New York in 1943 and the London conferences of this year, the British Standards Committee on Gas Cylinders had collected data on the sizes of outlet threads of cylinders made in the two countries for gases used by the military services and had prepared specifications and drawings of suitable adaptors. The Engineer Board at Fort Belvoir had also collected similar data and prepared drawings of adaptors for several gases. These data were furnished the British for their information and inclusion in future publications.

It was agreed that all available information should be published in the United States, Canada, and Great Britain in the form of a joint specification, this specification to show for each gas the recommended design

United States and Canadian Members of Screw Thread Mission

Standing (left to right): Frank E. Richardson; Paul J. Des Jardins; Cyril Ainsworth; Henry W. Bearce; Neil P. Petersen.

Seated (left to right): Elmer J. Bryant; Colonel Harry B. Hambleton; James G. Morrow.

of adaptor to connect American cylinders to British apparatus and vice versa. A system of marking these adaptors was also agreed to.

High-Duty Studs in Light Alloys

Frank E. Richardson

Engineer, Army Air Forces

As no definite standard has been adopted in the United States, the delegation from this country were unable to present any definite proposals for tolerances on the threads at the fitting ends of high-duty studs and for the corresponding tapped holes in light alloys. Selective assembly was being used and the amount of interference varied from 0.003 to 0.006 inch depending upon the size of stud and hardness of the light alloy.

The British reported that British Standard 1171:1944 is being followed in Great Britain. The truncated Whitworth form of thread is used and the maximum size for the stud is made basic. The desired amount of interference, which is of the order of 0.002 to 0.003 inch, is obtained by using under-size tapped holes.

It was agreed that an American War Standard for stud fits should be prepared and circulated, and that Canada should issue a corresponding standard. It was understood that the United States and Canada in preparing the standards would keep in mind British Standard 1171:1944 and that all countries would continue to keep one another informed concerning further developments in their respective countries.

Acme Threads

Paul J. Des Jardins

Pratt & Whitney Division, Niles-Bement-Pond Company

The first British Standard for general-purpose Acme Threads was published in 1943 and followed in close detail the American Standard published in 1941. When the British heard late in 1943 that a revision of the American Standard was planned, the British Standards Institution withheld further issue of its own standard.

The mission from the United States presented a draft of a proposed American War Standard for Acme Threads[1] to the London Conference. This standard dealt not only with general-purpose Acme Threads having liberal clearances at the crests and roots, but also special-purpose threads fitting closely at the crests of the threads on the screw, with the object of providing axial alignment of the mating units. The standard established a recommended series of Acme threads of related diameters and pitches and provided information on limits and tolerances for three grades of accuracy not only for the screws and nuts in the recommended series, but also for those of non-standard diameters and pitches. A recommended system of gaging was also included.

The British and Canadian delegations approved of this standard with a few minor amendments and agreed to recommend that the British Standards Institution and the Canadian Standards Association publish the standard as British and Canadian Standards respectively. The British recommended that the American Standards Association should undertake the development of a corresponding American War Standard for Stub-Acme Threads for ultimate acceptance also as British and Canadian standards. This was agreed to by the conference as a whole.

Cylindrical Fits

Henry W. Bearce

National Bureau of Standards

The delegation from the United States presented for the consideration of the conference a proposed American War Standard for Cylindrical Fits in which series of preferred basic diameters, tolerances, and allowances were set out, as well as a system of symbols for designating shafts, holes, and fits. The British approved the scheme of preferred diameters, tolerances, and allowances, but thought the American proposal was open to objection that it provided no guidance to the designer in the unlimited choice of combinations of

[1] Proposed American War Standard for Acme Threads, B1.5, now being considered by the American Standards Association for final approval.

tolerances and allowances on shafts and holes. The British also pointed to a weakness of the standard, namely, that due to its comprehensive form it was not readily understood except after considerable study. The proposed system of symbols did not meet with favor.

The British suggested that the British Standard should be revised using the proposed American system of preferred diameters, tolerances, and allowances, associated with charts of simple form for various classes of fits with reference to the accuracy normally expected from different manufacturing processes, such as drilling, grinding, lapping, turning, etc, the tolerance range for each process to be broken down into a small number of steps. The United States and Canadian delegates viewed this suggestion favorably and it was agreed that the British Standards Institution should develop a proposal and submit it to Canada and the United States for detailed consideration.

Instrument Screw Threads

Frank E. Richardson

Engineer, Army Air Forces

The discussion at the conference on Instrument Threads fell under the general headings of Fastening Screws, Bearing Adjusting Screws, Fine Motion and Translating Screws, and Optical Mounting Threads for Tubes and Bells.

In the United States, it has been the practice, in so far as fastening screws above 0.060 diameter are concerned, to use the American National Fine Thread Series. In Great Britain the British Associattion (B. A.) Series has been used and because of the wide differences in the practices of the two series, the London conferences realized that it would not be possible to achieve a unification of these larger screws.

The case of screws below 0.060 inch and 80 threads per inch was discussed in relation to the British American Series and the Swiss Horological Society Series of threads in metric units having a 60-degree angle. It was finally agreed that for instrument screws smaller than 0.060, the British Standards Institution should prepare and submit to America a modified British Association Series with the diameters and pitches in inch units rounded off to convenient figures, in the hope that agreement might be reached on a series of small instrument fastening screws.

No technical information regarding bearing adjusting screws was placed before the conferences. As regards fine motion and translating screws for instruments, the American delegation had no proposals to offer. However, the discussions brought out the fact that definite recommendations on which a standard could be based would be found in a report on Optical Screw Threads issued in 1920 by an advisory committee of the Department of Scientific and Industrial Research. It was agreed by the conference that both American and British practice relating to bearing adjusting, fine motion, and translating screws should be investigated and the data correlated. Also it was agreed that the British would prepare proposals for preferred pitches and diameters of such screws and would circulate the proposals to the other countries for review.

In the case of optical mounting threads it appeared that, for objectives, the British Royal Microsopical Society Thread was universally used in America and Great Britain. On the other hand, it was found that the series of threads on tubes recommended in the 1920 report of the Department of Scientific and Industrial Research was not generally followed in Great Britain. A subcommittee of the conference gave this matter detailed consideration and drafted a new series of pitches for optical mounting threads on a preferred number basis. It was agreed that a further interchange of information would be made and that the British would prepare and circulate to the other countries, for review, definite proposals for preferred pitches and diameters.

Unification of British and American Screw Thread Systems

Paul J. Des Jardins

Pratt & Whitney Division, Niles-Bement-Pond Company

The delegation from the United States presented a proposal for unification based on the American Fine thread series. In this proposal, the form of thread is the same as the American National form except that the root is rounded to a point approaching the permissible contour produced by a worn tool under present American practice. These threads are therefore strictly interchangeable with the present American National Fine threads.

In discussing this proposal, the British delegates confirmed the desirability of a change in the present British Fine series in the direction of the American National Fine thread series. They understood the reluctance of American engineers to depart from the 60-degree angle thread system, but stated that the acceptance of the proposed form of thread would represent such a radical change to most British producers that convincing proof of the superiority of the proposed thread over present British thread systems would have to be provided before there could be any hope of the acceptance of the proposal by the British. The British delegation, therefore, suggested a program of research to determine the effect of various angles and root radii on the fatigue strength of both mild and high-tensile steel specimens. Agreement was reached on the British proposal and the basic structure of a program of research was developed. This program is to be carried out jointly by the three countries represented at the conference.

Some of the principal points brought out in the discussions on a research program were:

(1) That fatigue tests were the only tests which would be likely to bring out the desired information.

(2) That the materials to be used should be typical of the mild alloy steels in common use for bolts and screws in the respective countries.

(3) That the various methods of cutting threads such as die-cutting, lathe threading, grinding, and milling, would not differ sufficiently to warrant tests on each method. Milling with a single cutter for mild steel and grinding on high-tensile steel were chosen as being likely to combine the most accurate results with the minimum difficulty in production. Rolling, however, was recognized as introducing quite different characteristics and a complete series of tests on rolled threads in both mild and high-tensile steels was considered essential.

(4) That studs threaded on both ends should be used to avoid trouble with failures associated with the form of head or method of heading.

(5) That thread forms having 45, 50, 55, 60, 65 degree angles be tested.

(6) That cross-check tests should be carried on in each country, some tests of the British materials being run in the United States and Canada and vice versa.

The London conference agreed that the invitation of the Canadian delegation to meet in Canada next spring or earlier if the testing program was sufficiently advanced should be accepted. This would enable the conference to determine whether further testing should be carried on or whether sufficient data were at hand on which a unification proposal could be based. It was further agreed that the American Standards Association, the British Standards Institution, and the Canadian Standards Association should set up a panel whose duty it would be to direct the program of research, and to maintain mutual contact, with a view to preparing final joint recommendations.

ASA War Committee Acts on Screw Thread Mission Reports

THE general ASA War Committee on Screw Threads held a meeting in New York on November 17, 1944, and took action on several of the subjects reported at the general conference in the Engineering Societies' Building, November 16. Elmer J. Bryant, chairman of the British-Canadian Mission on Screw Threads, is chairman of the General ASA War Committee, B1. The steps taken by the War Committee to carry out agreements made with British experts at the conferences in London in August and September are briefly mentioned below.

Screw Threads of Truncated Whitworth Form, B1.6—

The draft of a revision of the present American War Standard B1.6-1944 will be prepared at once and sent to letter ballot of the two ASA War Committees concerned—the ASA War Committee on Screw Threads of Truncated Whitworth Form and the General ASA War Committee on Screw Threads. Upon approval by these committees it will be submitted to the ASA for final approval and publication of the new edition. The revision will embody the changes agreed on at the London conferences.

Buttress Threads, B1.10—

A new ASA War Subcommittee was appointed to consider the draft of a War Standard to be prepared by the British:

H. W. Bearce, National Bureau of Standards, *Chairman*
F. E. Richardson, Army Air Forces
Archibald E. Smith, Army Ordnance Department
Paul V. Miller, Taft-Peirce Manufacturing Company

Pipe Threads, B2—

Subsequent to the meeting on November 17, Mr. Bryant appointed the following ASA War Subcommittee on Pipe Threads, B2:

A. M. Houser, War Production Board, *Chairman*
J. J. Dunn, National Tube Company
L. W. Kattelle, Walworth Company
Paul V. Miller, Taft-Peirce Manufacturing Company
B. B. Westcott, Gulf Oil Company

This War Subcommittee will prepare a draft of an American War Standard for pipe threads in sizes 4 inches and below, as agreed with the British. Work on this subject has already been started.

High-Duty Studs in Light Alloys, B1.8—

The following ASA War Subcommittee was appointed to draft an American War Standard on this subject:

F. E. Richardson, Army Air Forces, *Chairman*
Colonel H. B. Hambleton, Army Ordnance Department
W. L. Barth, General Motors Corporation
C. E. Nickerson, Lockheed Aircraft Corporation
Lt. Col. A. F. Wentzel, Air Corps, Wright Field

Acme Threads, B1.5—

The proposed American War Standard approved by the ASA War Committee on Acme Threads, B1.5, at a meeting held on October 20, was approved with a few changes by ASA General War Committee B1. The most important of these changes is in the pitch diameter allowances for Class 5 and 6 screws. (Class 5 and 6 screws and nuts have been added to the Centralizing screws and nuts, Classes 2, 3, and 4, upon special request of a group of aircraft companies.) As originally proposed, pitch diameter allowances for Class 5 and 6 screws would exceed those for Class 2 and 3 screws, respectively, by the constant value, 0.005 in. This constant has now been changed to the value $0.002\sqrt{D}$, in which D is the nominal diameter.

A new draft, revised in accordance with the decisions of the November 17 meeting, has been sent to all members of the two ASA War Committees concerned. When those members who did not attend the meeting on November 17 have expressed their opinion on this new draft, it will be submitted to the ASA for final approval.

Cylindrical Fits, B4—

This subject was discussed, prior to the conference on November 16, at a joint meeting of members of the Drafting Committee of B4, two members of a subgroup of three, and with E. J. Bryant and P. J. Des Jardins, members of the Mission. The drafting committee is made up of the following members:

J. E. Lovely, Jones & Lamson Machine Company, Springfield, Vt.
W. H. Gourlie, R. T. Palmer Company
Col. H. B. Hambleton, Army Ordnance Department
John Gaillard, American Standards Association

H. W. Bearce, National Bureau of Standards, and C. F. McElwain, International Business Machines Corporation, were the two members of the subgroup.

On September 1, a large number of key individuals had been canvassed on a draft of Part 1 of a proposed American War Standard on Cylindrical Fits, B4.1/6, dealing with Preferred Basic Diameters; Tolerances and Allowances; and Symbols for Holes, Shafts, and Fits. This draft had also been discussed by the British and the United States-Canadian Mission. At the November 15 meeting, the results of the canvass and the conferences with the British were reported. This report led to a unanimous decision that a revised draft of Part 1 should be prepared in which several recommendations by the British should be adopted. These

concern the addition of values to the Preferred Basic Diameters, Tolerances, and Allowances, and also the assignment of series of tolerances to components in specific diameter ranges. Moreover, the British have proposed that general recommendations be made concerning the methods of finishing components to size by which given tolerances can be maintained (within given diameter ranges) in shop practice. A new draft of Part 1 is now being prepared for the approval of the members of the combined group who met on November 15. When they have reached agreement, the new draft will be submitted to the entire ASA War Committee B4. At the same time, work on gaging specifications will be taken up, to become Part 2 of the Proposed American War Standard.

Instrument Threads, B1.7—

Pending receipt of further comments from the British on a proposed series of instrument threads, diameter range 0.010 to 0.060 inch, drafted by ASA War Subcommittee B1.7, this committee is ready to deal with five kinds of threads. These are:

Fastening threads
Bearing adjustment threads
Translating threads
Optical instrument threads
Mounting threads (for mounting instruments on stands)

It was reported that a number of threads for mounting lenses on photographic equipment and microscopes had been developed or were being developed in the ASA Sectional Committee on Photography, Z38. It was decided that these threads would be given attention by ASA War Subcommittee B1.7. In this connection, Dr. Oscar W. Richards, Spencer Lens Company, who is chairman of the ASA Subcommittee on Printing and Projection Equipment, was appointed a member of B1.7. Lt. Col. A. F. Wentzel, Army Air Forces, was also appointed a member.

Unification of Screw Threads, B1.9—

The work to be done on this subject consists of two parts. One is the preparation of an American War Standard for threads similar to the American Coarse, Fine, and Special series, but having rounded roots on the screws. A proposal concerning the American Standard Fine thread series was discussed with the British at the London conferences. The Coarse and Special series will now be added. All threads with rounded roots thus developed will be interchangeable (including gaging specifications) with the corresponding threads of American National Form. The following ASA War Subcommittee on Unification of Screw Threads, B1.9, was appointed to draft the War Standard:

Paul J. Des Jardins, Pratt and Whitney Division, Niles-Bement-Pond Corporation
Gustaf Carvelli, Wright Aeronautical Corporation
Col. H. B. Hambleton, Army Ordnance Department
D. R. Miller, National Bureau of Standards
Archibald E. Smith, Army Ordnance Department
F. E. Richardson, Army Air Forces
W. C. Stewart, American Institute of Bolt, Nut and Rivet Manufacturers
Frank P. Tisch, Pheoll Manufacturing Company

The other part of the work is the establishment and carrying out of a research program, comprising a series of tests to find a factual basis for the steps to be taken in setting up unified thread series. A tentative outline of such a research program has been discussed with the British, but this has to be worked out in more detail, not only with the British but also between the American and Canadian groups. To achieve this, the following Planning Committee on Program of Tests for the Unification of Screw Threads was appointed:

H. W. Bearce, National Bureau of Standards, *Chairman*
W. L. Barth, General Motors Corporation
Paul J. Des Jardins, Pratt and Whitney Division, Niles-Bement-Pond Corporation
Col. H. B. Hambleton, Army Ordnance Department
James G. Morrow, President, Canadian Standards Association; The Steel Company of Canada, Ltd
F. E. Richardson, Army Air Forces
W. C. Stewart, American Institute of Bolt, Nut, and Rivet Manufacturers
K. D. Williams, Bureau of Ships, U. S. Navy
John A. Sears, National Physical Laboratory, *liaison member*

It was agreed that tests would be made with the cooperation of the Government (the National Bureau of Standards; Army Ordnance Department; and the Experimental Station of the Navy Department) and industry.

ASA Welcomes New Members

During the past 60 days 26 new companies have become members of the American Standards Association, representing a wide variety of industries including tool and instrument manufacturing, roofing, insurance, and electrical service:

Company Members—

American Die & Tool Company, Reading, Pennsylvania
American Lumber & Treating Company, Chicago, Illinois
Asphalt Roofing Industry Bureau, New York, N. Y.
Barth Stamping & Machine Works, Cleveland, Ohio
Commercial Metal Products Company, Chicago, Illinois
Companhia Industrial Machina S. Paulo, São Paulo, Brazil
Dazor Manufacturing Company, St. Louis, Missouri
Federal Manufacturing and Engineering Corporation, Brooklyn, N. Y.
Frank Rieber, Inc., Los Angeles, California
Galvin Manufacturing Corporation, Chicago, Illinois
Kinzbach Tool Company, Inc., Houston, Texas
Library of Industrial Research, Chicago, Illinois
J. A. Maurer, Inc., New York, N. Y.
Moorlane Company, Inc., Tulsa, Oklahoma
National Surety Corporation, New York, N. Y.
National Tool & Manufacturing Company, Kenilworth, New Jersey
Pioneer Engineering & Manufacturing Company, Detroit, Michigan
Public Service Company of Northern Illinois, Chicago, Illinois
Russell Electric Company, Chicago, Illinois
Shure Brothers, Chicago, Illinois
Sigma Instruments, Inc., Boston, Massachusetts
The Haloid Company, Rochester, New York
The Kalart Company, Inc., Stamford, Connecticut
The Richmond Fireproof Door Company, Richmond, Indiana
U.S. Automatic Corporation, Amherst, Ohio
U.S. Machine Tool Manufacturing Corporation, Clinton, Indiana

Individual Member—

Walter E. Montgomery, Montreal, Canada.

ASA membership service includes copies of INDUSTRIAL STANDARDIZATION, free copies of newly published standards, 20 percent discount on all American Standards, use of the library and informative service, and direct and authoritative information about standardization projects.

New Code for Protection Against Explosions of Magnesium Dust[1]

by Hylton R. Brown[2]

Chairman, ASA Sectional Committee on Prevention of Dust Explosions, Z12

MAGNESIUM in the form of powder or dust can be ignited readily by a spark or flame or by the application of sufficient heat to raise the temperature to about 900 F. In suspension in air, magnesium powder or dust may form an explosive mixture capable of producing high pressure, and the rate of pressure rise, which is a measure of the severity of a dust explosion, is extremely high in the case of magnesium. Fires, too, which may develop into dust explosions, are particularly dangerous and difficult to combat in places containing magnesium powder or dust because the ordinary types of fire extinguishers are not generally effective against them. In fact, the committees of the National Fire Protection Association and the American Chemical Society which prepared the Table of Common Hazardous Chemicals specify that water, foam, carbon tetrachloride, or carbon dioxide extinguishers should not be used on magnesium powder fires.

To aid in protection against explosions of magnesium powder or dust, the Dust Explosion Hazards Committee of the National Fire Protection Association, organized as a sectional committee of the American Standards Association, has prepared recommendations which are incorporated in a new American Standard Safety Code for Explosion and Fire Protection in Plants Producing or Handling Magnesium Powder or Dust. This code, adopted by the National Fire Protection Association at its meeting in May 1944, was recently approved as American Standard with the designation Z12.15-1944.

War Increased Production of Magnesium

It is only recently that metal powders other than aluminum and zinc have been produced in relatively large quantities; and very little information was available on magnesium dust explosion hazards when the committee started work on the code. This recently increased demand for metal powders is partly due to the development of powder metallurgy (the fabrication of machine parts by high-pressure molding of metal powder); but the war is largely responsible for the increased production of magnesium powder, which is used in flares, signal, tracer, and incendiary munitions.

Information on the characteristics and explosive properties of many different dusts has been obtained through tests and research in the laboratories of the U. S. Bureau of Mines, and this information has enabled the Dust Explosion Hazards Committee to evaluate the dust explosion hazard in new or expanding industries. This applies particularly in the case of magnesium powder.

Tests such as this are conducted by laboratories to study the behavior of fires in finely divided magnesium. Information thus obtained has been used in preparing American Standards.

Laboratory tests, made in the Bureau of Mines to determine the explosive characteristics of 53 metal powder samples, included several varieties of magnesium powder. The results were published in Report of Investigation 3722, *Inflammability and Explosibility of Metal Powders.* This information, available to the committee, indicated that magnesium dust was more explosive than carbonaceous dusts for which codes had previously been prepared. The following summary of results obtained with two types of magnesium powder, starch and coal dust, will permit a direct comparison and evaluation of their relative flammability and explosibility.

	Relative Flammability		Maximum Pressure Lb/Sq In.	Rate of Pressure Rise Lb/Sq In./Sec	
	In Furnace	In Spark Tube		Average	Maximum
Magnesium, stamped.	90+	90+	72	1450	4760
Magnesium, milled ..	90+	90	65	1600	3160
Cornstarch	90+	80	51	830	1590
Pittsburgh coal	90+	65	46	370	780

[1] Published by permission of the Director, Bureau of Mines, U. S. Department of the Interior.

[2] Senior Engineer, Bureau of Mines, U. S. Department of Interior; chairman of the National Fire Protection Association Committee on Dust Explosion Hazards, which also operates as a sectional committee of the American Standards Association.

Scope of Recommendations

The new code contains recommendations on the construction and location of buildings, the making, handling, and storage of magnesium powder, and certain safety precautions designed to prevent possible ignitions. There is a special section on fire protection for magnesium powder plants. The second part of the code deals with the hazards surrounding grinding, buffing, and similar dust-producing operations in connection with the handling of magnesium or magnesium alloy products. Several methods of collecting and precipitating the dust from the grinding wheels are illustrated.

Recommendations in the new code, both on explosion prevention and fire protection, are based on information at present available to the committee and represent the consensus of a number of manufacturers and users of magnesium as well as fire protection authorities who were consulted on the subject. The code was also reviewed by representatives of the Safety and Security Branch of the Office of the Chief of Ordnance of the War Department before being presented for adoption.

It is realized that changes are constantly being made in manufacturing processes and new methods of fire protection may be developed. Such changes are particularly likely to occur in comparatively new and rapidly expanding industries, such as metal-powder production. For instance, it is known that attention is being given to the development of wet-grinding methods, which are designed to prevent the production of explosive clouds of magnesium powder. Although early attempts to produce magnesium powder by the atomization process were not successful, attention is being directed to the possibility of producing powder safely by this method through the use of inert gases, such as nitrogen. Improvements in dust-collecting equipment for use around magnesium-grinding operations have been reported; and demonstrations of new magnesium fire-fighting methods are encouraging.

The Dust Explosion Hazards Committee solicits comments and suggestions on the present code[3] and will particularly welcome information on improved methods of powder production, explosion prevention, or fire protection. Revisions in the code will be made as promptly as possible in accordance with operating experience and data furnished to the committee. Other codes prepared by the committee and approved as American Standards are listed below.

Installation of Pulverized Fuel Systems (Z12.1-1942)
Prevention of Dust Explosions in Starch Factories (Z12.2-1942)
Prevention of Dust Explosions in Flour and Feed Mills (Z12.3-1942)
Prevention of Dust Explosions in Terminal Grain Elevators (Z12.4-1942)
Prevention of Dust Explosions in Woodworking Plants (Z12.5-1942)
Prevention of Dust Explosions in Pulverizing Systems for Sugar and Cocoa (Z12.6-1942)
Prevention of Dust Explosions in Coal Pneumatic Cleaning Plants (Z12.7-1942)
Prevention of Dust Explosions in Wood-Flour Manufacturing Establishments (Z12.8-1942)
Prevention of Dust Ignitions in Spice-Grinding Plants (Z12-9-1942)
Safety Code for Use of Inert Gas for Fire and Explosion Prevention (Z12.10-1943)
Prevention of Dust Explosions in the Manufacture of Aluminum Bronze Powder (Z12.11-1943)
Prevention of Sulphur Dust Explosions and Fires (Z12.12-1943)
Prevention of Dust Ignitions in Country Grain Elevators (Z12.13-1943)
Suggested Good Practices for the Application of Suction and Venting for the Control of Dust in Grain Elevators and Storage Units (Z12.14-1943)

Many of the codes, it will be noted, deal with carbonaceous dusts, which at one time were considered to be the only materials capable of producing dust explosions. Now two of the 15 codes deal with metal powders, and the committee is working on a code for the prevention of dust explosions in the plastics industry. For convenience, all of the Dust Explosion Standards have been published in one volume, which can be procured through the offices of the National Fire Protection Association and the American Standards Association. As new dust explosion hazards develop in connection with the manufacture of new products, the greater utilization of byproducts, or the adoption of new processes, the Dust Explosion Hazards Committee will endeavor to combat these hazards by publishing codes or recommendations for safe operating procedure.

Ignition of very small quantity of magnesium dust may cause extensive damage. New American Standard recommends segregation of grinding or dust-producing equipment.

ASTM Schedules Meetings

The American Society for Testing Materials has scheduled the following meetings early in 1945:

Spring meeting, Pittsburgh, Hotel William Penn, February 28, 1945

ASTM Committee Week, Pittsburgh, Hotel William Penn, February 26 to March 2, 1945

Forty-eighth Annual Meeting, Buffalo, Hotel Statler, June 18 to June 22, 1945

[3] Comments may be sent to the American Standards Association, 70 East 45 Street, New York 17, N. Y., or to the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass.

How the Dust Explosion Hazards Committee Is Organized

Many national associations are represented on the Dust Explosion Hazards Committee. The members include men from many different types of industry and safety organizations who are thoroughly familiar with manufacturing hazards. It has been the practice, however, in preparing specific codes to work with a subcommittee or consult with a group of industrial operators who have had personal experience or are directly interested in the hazards being considered. The organization of the main committee at the time the magnesium code was prepared is given below.

Hylton R. Brown, Bureau of Mines, U. S. Department of Interior, *Chairman*

American Boiler and Affiliated Industries, *E. G. Bailey*
American Feed Manufacturers Association, *Eugene Arms*
American Foundrymen's Association, *S. B. Hansen*
American Society of Mechanical Engineers, *Ralph M. Ferry*
Associated Factory Mutual Fire Insurance Companies, *Heston S. Hirst*
Association of Mill and Elevator Mutual Insurance Companies, *Eugene Arms*
Corn Industries Research Foundation, *C. J. Alger*
Dust Collection Equipment Manufacture, *Lester C. Smith*
Edison Electric Institute, *E. R. Crofts*
Factory Insurance Association, *Winthrop M. Jones; W. I. Hanson*
Fire Protection and Insurance Section, Association of American Railroads, *R. O. Wager*
Grain Elevator Construction, *G. F. Butt*
International Association of Fire Chiefs, (Appointment of new representative pending)
International Association of Fire Fighters, *John P. Redmond*
International Association of Governmental Labor Officials, *William L. Boylan*
International Association of Industrial Accident Boards and Commissions, *James Crosser, Jr.*
Millers National Federation, *Eugene Arms*
National Board of Fire Underwriters, *Paul Mann; H. E. Newell*
National Bureau of Casualty and Surety Underwriters, *F. W. Sehl*
National Electrical Manufacturers Association, *L. F. Adams*
National Safety Council, *R. L. Forney*
Northwest Country Elevator Association, *Capt. L. C. Webster*
Society of Grain Elevator Superintendents of North America, *Dean M. Clark*
Terminal Grain Elevator Merchants Association, *J. A. Mull*
Underwriters' Laboratories, Inc., *A. H. Nuckolls*
U. S. Department of Agriculture, Bureau of Agricultural and Industrial Chemistry, *David J. Price*
U. S. Department of Interior, Bureau of Mines, *H. P. Greenwald*
U. S. Department of Labor, *H. W. Brown*
Western Actuarial Bureau, *K. H. Parker*
Members-at-Large, *Robert Palm; George S. Rice; Edwin B. Ricketts*

The *National Fire Codes for the Prevention of Dust Explosions*, containing all 15 American Standard dust explosion codes, can be obtained at $1.00 from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass., or from the American Standards Association, 70 East 45 Street, New York 17, N. Y. ASA Members purchasing approved American Standards through the ASA office are entitled to 20 percent discount.

Business Conference Group Recommends International Standards

A single international clearing house for the establishment of standards for cereals, legumes, seeds, oils and fats, and other materials and semi-processed products of agriculture, mining, forestry, and fishing, was recommended by the Raw Materials and Foodstuffs Section at the International Business Conference at Rye, New York. The recommendation proposed that the clearing house should be established as a part of a general international organization. Its activities would include the following functions, it was suggested:

1. Provide a clearing house for information with regard to the establishment of standards for cereals, legumes, seeds, fibres, oils and fats, hides and skins, animal products, and other materials and semi-processed products of agriculture, mining, forestry, and fishing.

2. Provide for the gathering of international statistics on crop conditions, production outlook, and probable market conditions, together with the assembly and dissemination of all such information as will help the producers, distributors, and consumers throughout the world better to estimate their prospective demand. Such agency shall assist all countries, when called upon, to improve their own systems of collecting such information.

3. The members of the trade associations should cooperate with such an international agency in perfecting the grades and standards. Business and industry should make use of these standards and provide for a suitable system of arbitration in case of disputes.

4. There should be adopted, for use in international trade, a single system of weights and measures, preferably the metric system and a standardization of containers with reasonable tolerances.

Foreign Trade Convention Endorses ASA Inter-American Work

Pleased with the recent growth of inter-American cooperation on standards, the National Foreign Trade Convention, held in New York, October 9, 10, and 11, included an endorsement of the standardization movement in its final resolutions. The Convention recommended that the inter-American work of the American Standards Association be supported "to assure its continuity and effectiveness."

"The Convention notes with satisfaction that organizations have been set up in a number of Latin American countries, and that others are in the process of formation, with the object of bringing about a comprehensive acceptance throughout the Americas of agreed standards and specifications," the resolution stated.

Legality of Simplification and Standardization Under the Anti-Trust Laws

IN AN effort to dispel much of the confusion which has recently existed in regard to the legality of standardization and simplification, an article by E. Compton Timberlake was published recently in the *Cornell Law Quarterly*.[1] This article has now been issued in reprint form. The article deals wholly with group programs, especially those of trade associations. It says:

"In a survey conducted by the Temporary National Economic Committee during 1938 and 1939, it was found that 725, or 58.3 percent, of the 1,244 national and regional trade associations responding to the questionnaires engaged in standardization and simplification activities."

Mr. Timberlake is connected with the legal firm of Donovan, Leisure, Newton and Lumbard, legal counsel for the National Electrical Manufacturers Association and other trade associations. He is now in military service.

Defines "Standardization" and "Simplification"

In considering definitions, the author emphasizes the difference between the setting up of a standard and the use to which it is put:

"Having in mind these facts and defining *the process followed and not the hoped-for results*, the following definitions have been evolved which it is believed are correct from a legal standpoint:

"Standardization means the formulation of standards defining a product or process with reference to composition, construction, dimension, quality, operating characteristics, performance, nomenclature and other like factors.

"Simplification means the formulation of standard product lines consisting of types, sizes, shapes, grades, colors and varieties of product most frequently demanded by consumers."

Same Approach Used by Agnew

This is the same approach as that used in an article on "Legal Aspects of Standardization and Simplification" by P. G. Agnew (INDUSTRIAL STANDARDIZATION, October, 1941) from which Mr. Timberlake quotes, and in which the position was taken that practically all of the confusion and discussion in regard to the legality of standardization and simplification is based upon a failure to distinguish between the process of setting up a standard and the uses to which the standard may afterward be put.[2]—Just as an ax is a perfectly legal tool but may be put to illegal uses.

Mr. Timberlake not only cites all of the significant court decisions, but also the pertinent consent decrees in anti-trust cases, and complaints and orders of the Federal Trade Commission. The more important of these are summarized in convenient form.

Regarding the court cases he says: "From the above cases we may tentatively conclude that standardization is not an unreasonable restraint of trade, provided that it is not part of a price-fixing scheme, does not restrict production, prevent the sale of seconds, and is not intended to exclude certain items."

Considers Limitations on Use of Standards and Simplifications

Regarding the limitations on the use of standards and simplifications, the author says:

"It should be made clear to all members of such trade associations and other groups that all parties are free to conform or not to the standards or standard product lines as they wish, and there should be no attempt by the association or any of its members to exert compulsion of any type upon other members, or to invoke moral sanctions, in an attempt to have them confine their manufacturing to products conforming to the standards or to only those items included in the standard product lines."

Special Attention to Simplified Practice Recommendations

Special attention is paid to Simplified Practice Recommendations—particularly in regard to an acceptor making for stock items omitted from a Recommendation. Mr. Timberlake thinks clarification by Congressional action is desirable—apparently with the purpose of liberalizing the anti-trust laws "concerning the legality of, participation in, and acceptance of, Simplified Practice Recommendations."

It happens that since Mr. Timberlake's article was written the National Bureau of Standards has revised the wording of the acceptance blanks for Simplified Practice Recommendations and Commercial Standards; and the new wording makes it abundantly clear that an acceptor is free to make for stock items excluded from a Recommendation. (See page 267.)

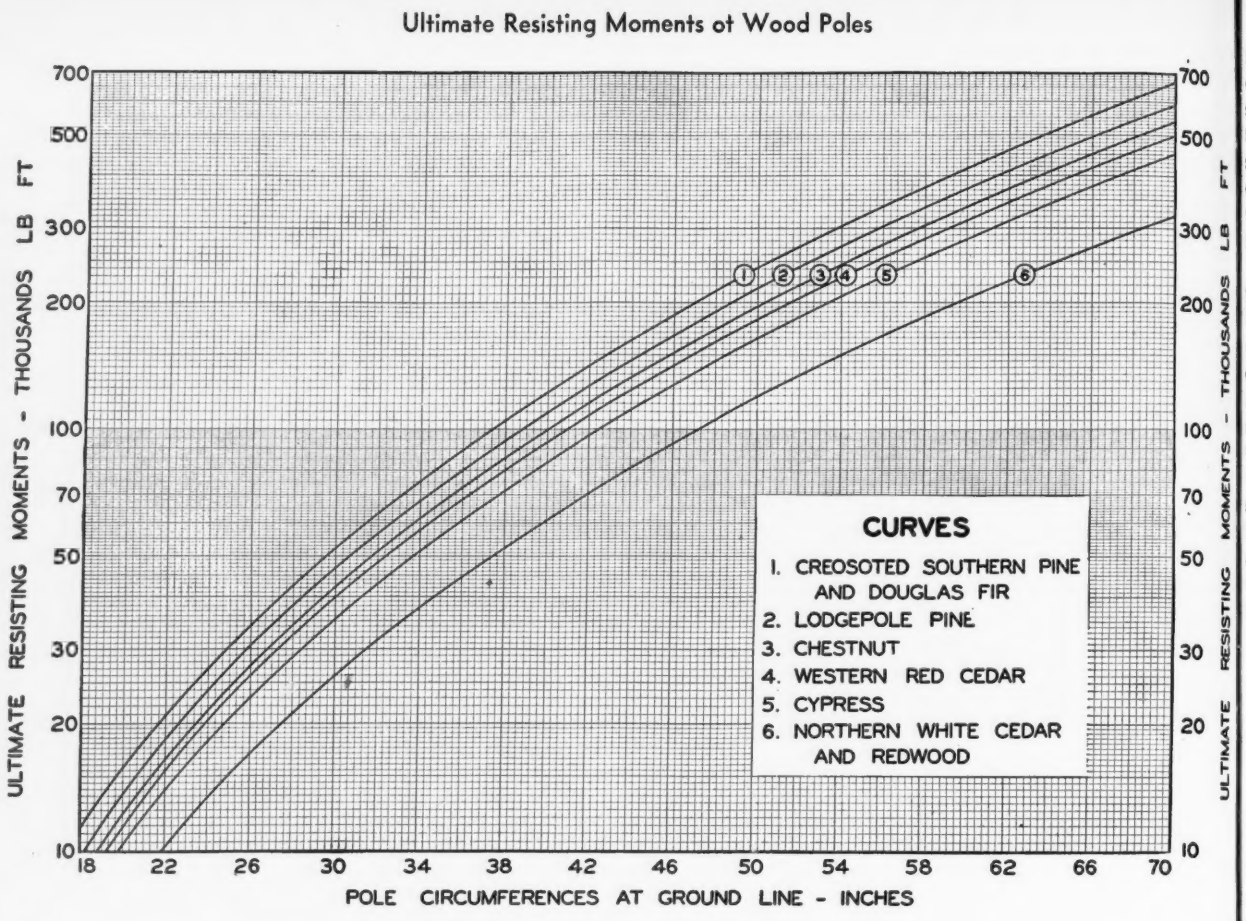
Finds Standardization and Simplification Legal and Unobjectionable

Mr. Timberlake sums the whole question thus:

"In conclusion, it appears that standardization and simplification are legal and unobjectionable. Agreements to adhere to the standards, to make only standard items or to make only the items in the standard product lines, are probably unlawful restraints of trade, unless because of the peculiar facts of the case they can be justified under the rule of reason. In addition, standardization, if (1) it is used as a part of a price-fixing scheme, (2) it is used to exclude competitors from the field, (3) it is used to curtail production, or (4) it is used otherwise to restrain trade, would probably be condemned as part of the unlawful scheme."

[1] Cornell Law Quarterly, 29, No. 3, 1944, page 301.

[2] Reprints of this article are available upon request. A few copies of the reprint of Mr. Timberlake's article, originally published in the *Cornell Law Quarterly*, are also available to ASA members through the ASA office.—Ed.



New Publication Discusses National Electrical Safety Code

by John A. Dickinson[1]

Chairman, ASA Sectional Committee on the National Electrical Safety Code

A DISCUSSION of Part 2 of the fifth edition of the National Electrical Safety Code was published recently by the National Bureau of Standards. This Part, which covers the Safety Rules for the Installation and Maintenance of Electric Supply and Communication Lines, and the Grounding Rules of the National Electrical Safety Code, was approved by the ASA as American Standard C2.2-1941. Because of the nature of the material included in the discussion, however, it has not been submitted to the ASA for approval.

The practice of publishing a separately printed discussion of the rules was established in previous editions of the code because of the inherent need for conciseness in the code itself. The discussion explains the reasons for the rules, gives methods of application, and includes supplementary technical information. The appendices to the discussion include much technical data of value to transmission line engineers in putting the rules into effect. These tables are based on applicable loadings as determined by the rules in Part 2. The value of these discussions has been proved by the widespread demand for them.

As a war conservation measure, the publication of the complete fifth edition of the National Electrical Safety Code as a single volume has been deferred. However, the constituent parts are available as separate handbooks. It is planned to handle the discussions similarly, and the handbook of discussion covering Part 2 is the first of this series to be issued. The considerable amount of supplementary data contained in the discussion, and the technical nature of Part 2 itself make this discussion the most important of the group, and consequently it was chosen as the first to appear. The discussion of the other parts may be available at a later date.

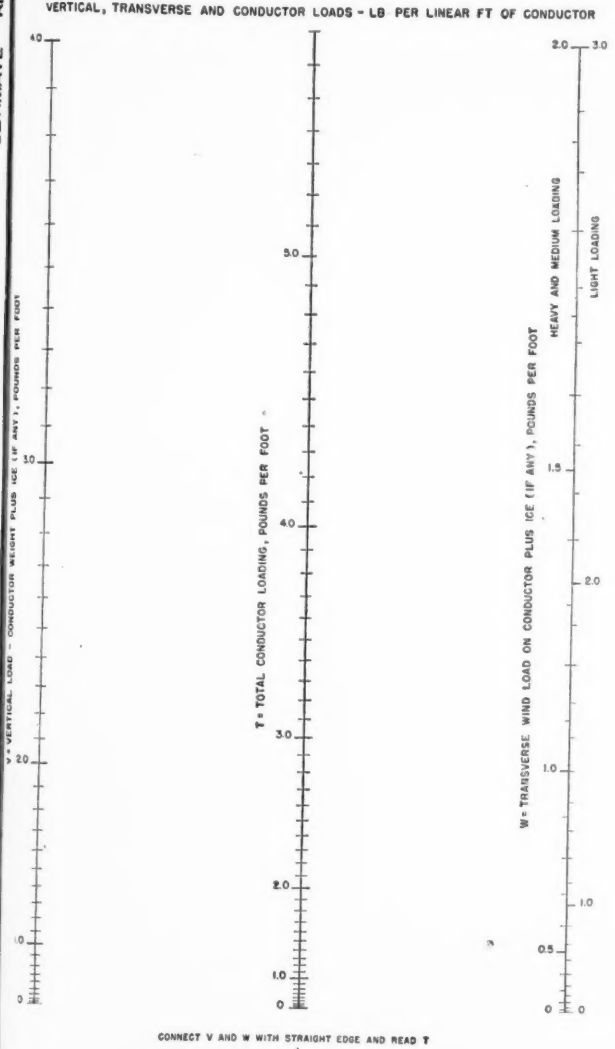
[1] Chief of the Section of Safety Codes, National Bureau of Standards.

The chart above, one of the Nomographs referred to in this article, shows the Ultimate Resisting Moments of Wood Poles.

The total number of pages devoted to this discussion is considerably less than that devoted to Part 2 in the discussion of the fourth edition. This economy of space was accomplished by the use of curves in lieu of tables to present certain data (such as the ultimate resisting moments of wood poles); by the elimination of discussion of rules which in the opinion of the Advisory Committee needed no discussion; and by making the discussion as concise as possible.

A considerable amount of space has been devoted to the new methods of computing strengths of lines and line-supporting members. Simple line diagrams are provided to show the various sags referred to in the code (initial unloaded sag, final unloaded sag, maximum total sag, and sag increase), the relation between span length and maximum sag increase, and the relation between sag increases and clearance increments.

In a few cases, actual examples are worked out to show the application of new rules. An example of this is the method of computing strength of guys at angles in a line. Three cases are given: Angle in line with single guy; angle in line with each leg guyed; and a "T" corner.



Conductor Loading Nomograph

This chart provides a sufficiently precise graphic method of determining "conductor loading" values, except for certain conductors when used in the light-loading district.

Three appendices are included. They cover much of the data given as appendices in the fourth edition of the code itself.

Appendix 1, Conductor Loading, includes:

(A) Table of conductor sizes, strengths, and loadings; (B) Nomograph for conductor loading; (C) Physical constants of conductors; (D) "Small" conductors and minimum supply conductor sizes at railroad crossings; and (E) Ruling spans.

Appendix 2, Sag Data, includes:

(A) Maximum sag increases; (B) Midspan sags; and (C) Catenary curve.

Appendix 3, Wood Pole Data, includes:

(A) Bending moments on wood poles due to wind; (B) Ultimate resisting moments of wood poles; and (C) Dimensions of wood poles (six tables of specifications for which American Standards have been approved).

An effort has been made throughout to make this discussion of maximum value to the user. The tables in the discussion which otherwise might be confused with similarly numbered tables in the code have been given a prefix "D" so that they may be identified at once. Tables without the prefix will be found in Part 2 of the code.

As requests had been made for full-size copies of certain charts and nomographs, the National Bureau of Standards has printed, as NBS Miscellaneous Publication M176, the five charts, two of which are shown herewith, on three 14 x 18 inch sheets. These charts may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 25 cents per set.

These charts include: Conductor Loading Nomograph (2 charts); Ultimate Resisting Moments of Wood Poles; Bending Moment Due to Wind Pressure on Pole; and Catenary Curve.

The National Electrical Safety Code, C2, has been developed through the sponsorship of the National Bureau of Standards. It is published in several parts, as follows:

Safety Rules for the Installation and Maintenance of Electrical Supply Stations (C2.1-1941; NBS Handbook H31)	10¢
Safety Rules for the Installation and Maintenance of Electric Supply and Communication Lines (C2.2-1941; NBS Handbook H32)	65¢
Safety Rules for the Installation and Maintenance of Electric Utilization Equipment (C2.3-1941; NBS Handbook H33)	15¢
Safety Rules for the Operation of Electric Equipment and Lines (C2.4-1939; NBS Handbook H34)	10¢
Safety Rules for Radio Installations (C2.5-1940; NBS Handbook H35)	10¢

A sixth part of the Code covering Electric Fences has not been approved by the ASA.

Copies of the Discussion of Part 2, *Analysis of Transmission Line Rules*, NBS Handbook H39, and the five separately printed charts, NBS Miscellaneous Publication M176, are available from the Superintendent of Documents, Government Printing Office, Washington, D. C. The discussion is 75 cents per copy; the charts are 25 cents per set.

Propose Standard Procedures For Certification Programs

by Dr. Bernard L. Oser

Vice-President and Director,
Food Research Laboratories, Inc.

THE growing practice of public endorsement or approval of consumer goods by magazines, professional and trade associations, and other organizations has led to the issuance of a new Proposed American Standard Practice in Public Approval and Certification Procedures by the American Standards Association.

The need for protecting the public against misuse of certification procedures by establishing a code of practice to insure their validity was proposed to the American Standards Association by the Association of Consulting Chemists and Chemical Engineers. The suggestion was made after a preliminary study of these pronouncements had revealed that practices varied widely, the public having no means of distinguishing the valid from the invalid.

As evidence of the widespread interests represented on the committee which prepared this Proposed Standard, a list of the members follows:

American Retail Federation
Bureau of Human Nutrition and Home Economics
National Association of Purchasing Agents
American Home Economics Association
War Food Administration
American Society for Testing Materials
Committee on Consumer Relations in Advertising
American Council of Commercial Laboratories
Association of Consulting Chemists and Chemical Engineers
National Bureau of Standards
Federal Trade Commission (liaison)
National Electrical Manufacturers Association
Grocery Manufacturers of America, Inc.
National Association of Wool Manufacturers
Radio Manufacturers Association

The purpose of the Proposed Standard is to provide a recognized procedure for public approvals, certifications, and listing systems in order to safeguard the interests of the buying public or of any agency whose purchases are made on the basis of conformity to standards or specifications. For those who are about to adopt such certification systems, this Proposed Standard will furnish a valuable guide. Some of the topics dealt with are:

Declaration of the sponsor
Standards employed in the system
Sampling and examination
Reexamination
Certifying agency (trade association, testing laboratory, etc)
Evidence of certification (labels, tags, etc)

The Association of Consulting Chemists and Chemical Engineers and the American Council of Commercial Laboratories, both of which organizations are keenly interested in the success of this project, have appointed committees that are cooperating in seeking to bring comments to ASA. The services of the Cooperative Committees on Valid Certification of the organization will be available, if desired, for assistance in analyzing experience and comments that have a bearing on the report. The chairman is Preston S. Millar, 2 East End Avenue, New York 21, New York.

Comments and Suggestions Requested

This document is issued for a period of one year for information and criticism. It is expected that during this time it will be studied by all who are concerned in the operation of certification programs. It is hoped that many constructive suggestions will be received by the American Standards Association, so that at the end of a year an amended document may be forthcoming.

The Proposed American Standard Practice in Public Approval and Certification Procedures, Z34.1/19, which is reproduced below for the information of ASA Members, may also be obtained gratis for a single copy, additional copies ten cents each, from the American Standards Association, 70 Each 45th Street, New York 17, New York.

The Proposed American Standard Practice in Public Approval and Certification Procedures

Foreword

For many years an increasing number of plans have been developed for using technological methods to aid the general public in selecting the products it buys. From the point of view of use, the complete certification process may be conveniently divided into four major steps:

(*a*) Setting up the standard. This must be sufficiently clear and specific as so to identify the product to buyer and seller that they know they are talking about the same thing.

(*b*) Issuing statements by manufacturer and distributor that their product complies with the standard. This is usually done on the label and in advertising copy.

(*c*) Verifying, by means of laboratory test or inspection, this claim that the product complies with the standard. In the case of producer goods, the purchaser usually has facilities for making this check either through his own inspecting forces, or by the use of an independent laboratory.

(*d*) Certifying to the general public that the product has been tested and that it meets the standard. A retail purchaser does not have facilities for testing a product himself, and must, therefore, depend upon the testing and certification procedures of independent agencies.

The American Standards Association deals primarily with the first of these processes, although its machinery provides for the participation of all groups concerned. Its functions include promoting "a knowledge of, and the use of approved American industrial and engineering standards."

From time to time interested groups have brought the subject of certification to the attention of the American Standards Association as a means of promoting and implementing the use of standards.

In 1932 the Association published the results of a survey of the use of certification and labeling methods in sixty commodity fields (ASA BULLETIN, January, 1932).

To have significant value as a means of promoting the use of standards in the marketing process, certification should be surrounded by adequate safeguards. This was recognized in a report approved by the ASA, which reads in part as follows:

"Any program of certification, labeling, or grade marking, in order to be adequate, should be based upon specifications which are publicly available and nationally recognized.

"It is for the group or groups substantially concerned with the specifications to decide whether there is to be certification or labeling; and the ASA itself cannot directly take any primary responsibility in respect to such activities.

"Any certification or labeling program should be effectively supervised by a properly qualified body; e.g., a trade association, or a testing laboratory, operating under proper administrative management.

"It is suggested to the Member-Bodies that they make a study to determine to what extent certification and labeling would be advantageous or disadvantageous to their work."

In 1936 the Association of Consulting Chemists and Chemical Engineers proposed to the American Standards Association a standard set of principles which should be followed in any plan of public certification. Work on the undertaking was authorized, and a committee was set up to develop such a standard set of principles.

As a result of the committee's work, the following "Proposed American Standard Practice in Public Approval Certification Procedures" is now issued for criticism.

Proposed American Standard

1. Purpose

1.1 The purpose of this American Standard Practice is to provide a standard procedure for public approvals, certifications, and listing systems.

2. Scope

2.1 This American Standard Practice sets forth the approved procedure to be followed in the operation of certifications* to the general public, and includes provisions for the use of suitable standards; and for competent and independent sampling and examination.

3. Auspices

3.1 There shall be a declaration of the qualifications or responsibilities of the interests or agencies which severally or collectively perform the following functions:

(*a*) Sponsor the certification
(*b*) Prepare the standard
(*c*) Draw the samples
(*d*) Determine conformity with the standard
(*e*) Defray costs thereof

4. Standards

4.1 Wherever available the standards employed, including specifications and methods of testing, shall be those nationally recognized or those which have been developed by a qualified trade association, agency, society, or other organization of national scope engaged in standardizing activities; otherwise they should preferably be arrived at through competent consumer, producer and general interest participation. Approval of a standard by the American Standards Association shall be prima facie evidence that it complies with these requirements.

4.2 Copies of the standards upon which a public certification rests shall be available either without cost or at a reasonable charge.

5. Sampling and Examination

5.1 The nature, extent and responsibility for the initial sampling and examinations (inspections, analyses, tests, etc) shall be stated.

6. Reexaminations

6.1 In general, certification is to be considered as of a continuing nature, which to be justified shall require that sampling and examination be recurring, periodic, systematic and adequate in extent. Sampling for reexamination shall be done, independently, by the agency issuing the report of examination.

6.2 Whatever system of reexamination is adopted shall be declared.

7. Certifying Agency

7.1 Certification shall be upon the responsibility of a qualified trade association, testing agency, society or other nationally recognized organization. The testing agency shall be of demonstrable independence and competence in the field involved.

8. Evidence of Certification

8.1 Labels, tags or other physical evidence of certification shall indicate:

(*a*) Identification of certifying agency
(*b*) Identification of standard or standards
(*c*) Conformity with the standard under paragraph 4

9. Referee Clause

9.1 Questions concerning the interpretation of the standard shall be referred to the organization which prepared the standard.

* Certification is employed in this document in a generic sense to comprehend all forms of public approval, certification, listing, etc.

9.2 All questions arising concerning compliance with the provisions of this American Standard Practice shall be referred to a referee acceptable to the sponsor, to the testing agency employed to do the testing, and to the party responsible for the question. Only the referee shall have access to records of examination and such other information as may be necessary to decide the question. The losing party shall bear all expenses incurred unless otherwise apportioned by the referee.

10. Information Available to Public

10.1 All information in paragraphs 3, 4, 5, 6, and 7 shall be available to the public on request but the sponsor or certifying agency shall be free to use it at any time.

10.2 It is requested that any organization experimenting with the Proposed American Standard Practice supply the American Standards Association with full information concerning all significant phases of the functioning of the undertaking or the performance of the plan as outlined in paragraphs 3, 4, 5, 6, and 7 of this document, and that the American Standards Association be advised also of the advantages or disadvantages disclosed during use.

10.3 It is especially requested that in any experimental use of this Proposed American Standard Practice, no reference be made to the American Standards Association that will appear to make the Association responsible in any way whatever for the operation of the plan in question.

A. Dexter Hinckley Appointed IES Executive Secretary

The Illuminating Engineering Society, Associate Member of the American Standards Association, announces that A. Dexter Hinckley, formerly Administrative Assistant to the Dean of Engineering, Columbia University, has been appointed IES Executive Secretary, with headquarters at 51 Madison Avenue, New York. Mr. Hinckley fills the vacancy occasioned by the resignation of Frank G. Horton, who has accepted the post of Managing Secretary of the Engineering Society of Detroit. Cazamer L. Crouch, well-known illuminating engineer, has been appointed Technical Secretary of the Society, the IES also announces.

Mr. Hinckley brings to his new position many years of administrative and professional experience. He is at present a Director and Member of the Council of the Illuminating Engineering Society, and has served as General Secretary of IES, chairman of the New York Section, secretary of the New York Section, and as chairman and member of numerous IES committees.

As Technical Secretary, Mr. Crouch will act as a consultant to the technical committees and to the Council of the Illuminating Engineering Society. Mr. Crouch will also be available for assistance in the Society's newly-established research program.

ASTM Issues Standards on Textile Materials

The 1944 edition of the *Standards on Textile Materials* just issued by the American Society for Testing Materials through the work of its Committee D-13 on Textile Materials includes more than 75 standard specifications, tests, and definitions. In addition, the book contains related charts and tables, proposed specifications and tests, and abstracts of technical papers.

In the section on standards comprising the major portion (365 pages) of the book, standards on general subjects are given first, such as definitions, requirements on testing machines, tests to evaluate fire-retardant properties, resistance to insect pests, micro-organisms, water, etc; the specifications covering specific textiles follow. These cover asbestos, bast and leaf fibers, cotton (the largest section), glass, rayon and silk, wool, and others.

Appended material includes a yarn number conversion table and a relative humidity table, a proposed universal yarn numbering system, and a test published for information covering evaluation of the properties relating to the hand of certain fabrics. Abstracts of papers presented in the 1944 Committee D-13 Meeting are included. These cover the cotton testing service; this service from the viewpoint of the breeder; raw materials problems; and Grex universal yarn numbering system. One chapter tells about the way in which the Ordnance Department has applied the statistical methods of quality control (American War Standards) in the supply of textiles to the Armed Forces.

The book includes a detailed subject index. Copies of this 490-page compilation are available from the American Society for Testing Materials, 260 S. Broad St., Philadelphia 2, Pa., at $2.75 each.

American Mission to Study British Aircraft Standards

Uniformity in standards of the American and British aircraft industries is the goal of a group of technicians now on the way to Great Britain on a mission to study British industrial standards for aircraft parts, practices, and materials.

The mission is being conducted under the direction of Flight Lieutenant D. G. Moffitt, RAF, of the British Air Commission. Members of the mission represent the National Aircraft Standards Committee and the Society of Automotive Engineers, and are returning a visit made to the United States by a British technical mission in May, 1943.

The United States mission includes:

T. P. Hearne, chairman of the international standards project of the National Aircraft Standards Committee; Standards Engineer of the Ryan Aeronautical Company
Eric Dudley, assistant to the director of engineering, Curtiss-Wright Corporation, Airplane Division
Eugene W. Norris, director of technical services, Aeronautical Chamber of Commerce of America
J. D. Redding, manager, aeronautical department, Society of Automotive Engineers
L. D. Bonham, materials and processes department manager, Lockheed Aircraft Corporation
Gustav Carvelli, standards engineer, Wright Aeronautical Corporation

Lieutenant Colonel G. R. Gaillard, AAF, will represent the working committee of the Army-Navy Aeronautical Board, as an observer.

National Bureau of Standards Changes "Acceptance" Wording

The National Bureau of Standards has adopted a new standard wording for the "acceptance blanks" for its Simplified Practice Recommendations and its Commercial Standards. These blanks are used in the final stage of the development or revision of "SPR's" and "CS's", to record their formal acceptance by individual manufacturers, distributors, users, and testing agencies, who plan to utilize the recommendation as their standard practice.

The underlying philosophy of permitting departures as deemed desirable remains unchanged, as does the principle that the mere vote of a committee is insufficient to warrant promulgation.

The Purpose of the Change

The purpose of the change is to make the wording as clear and simple as may be, and thus to remove any possible cause of misunderstanding on the part of the signers or of the public. (A question had arisen as to whether the former wording of the simplification blank would permit a signer to manufacture for stock an item not in the simplified line, in case he should decide that changing conditions made it advantageous for him to do so. The new blank makes it clear that he would be free to do so.)

As applied to the simplification of Plow Bolts, the new blank, now being circulated for signature, reads as follows:

"We believe that the proposed revision of Simplified Practice Recommendation R23, dated September 4, 1944, constitutes a useful standard of practice and we individually plan to utilize it as far as practicable in the

production[1] distribution[1] use[1] (other interest)[1]

of Plow Bolts. We reserve the right to depart from it as we deem advisable.

"Please advise us when this recommendation is promulgated and send us a printed copy when available.

SIGNATURE OF
AUTHORIZED OFFICER .....
(in ink)

(Kindly typewrite or print the following lines)

NAME AND TITLE
OF ABOVE OFFICER .....

ORGANIZATION .....
(Fill in exactly as it should be listed in pamphlet)

STREET ADDRESS .....

CITY, ZONE, AND STATE .....

[1] Underscore which one, please."

The Blank for Commercial Standards

The blank for Commercial Standards is the same except that the word "testing" is substituted for "other interests," and the following sentence is added, "We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labelled as conforming thereto." The new blank for Simplified Practice Recommendations omits the explanatory notes, "To the Acceptor," formerly used; but the blank for the proposed Commercial Standard for Grading of Diamond Powder is accompanied by four such notes, which read as follows:

"1. *Enforcement.*—Commercial standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices and the like.

"2. *The acceptor's responsibility.*—The purpose of commercial standards is to establish for specific commodities, nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable, in the production, distribution, or consumption of the article in question.

"3. *The Department's responsibility.*—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nationwide basis is fourfold; first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

"4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication."

Dr. Lyman J. Briggs, Director of the Bureau, states that in both instances the evaluation of the aggregate acceptance rests upon acceptances from individual concerns rather than from trade associations.

Navy Adopts Industrial Lighting Code

The Assistant Secretary of the Navy has designated the American Recommended Practice of Industrial Lighting, developed under the sponsorship of the Illuminating Engineering Society, as the safety code for industrial lighting in the Naval Shore Establishments. This code is to be applied to existing installations wherever possible, but will apply primarily on additional construction and where replacements are necessary or alterations made.

The American Recommended Practice of Industrial Lighting, A11-1942, was prepared by an ASA sectional committee under the sponsorship of the IES.

Standards Issued by Associations and Government

(For new American Standards see page 276)

For the information of ASA Members, the American Standards Association gives here a list of standards received by the ASA Library during the last month. The list below includes only those standards which the ASA believes are of greatest interest to Members.

These standards may be consulted by ASA Members at the ASA Library, or copies may be obtained from the organization issuing the standard. The address of the organization is included for your convenience in ordering.

Associations and Technical Societies

Society of Automotive Engineers (29 West 39th Street, New York 18, N. Y.)

Aeronautical Material Specifications

Aluminum Alloy Sheet and Plate, Copper Manganese Magnesium (17S-O) AMS 4030B; AMS 4032B
Aluminum Alloy Forgings
Silicon Magnesium Chromium (A51S-T) AMS 4125B
Copper Silicon Manganese (25S-T) AMS 4130B
Copper Silicon Manganese Magnesium (14S-T) AMS 4135B
Copper Nickel Magnesium (18S-T) AMS 4140B
Silicon Magnesium Copper Nickel (32S-T) AMS 4145C
Aluminum Alloy, Copper Manganese Magnesium (17S-T) Extruded AMS 4151A
Corrugated Fibreboard (Double Wall) AMS 3554
Dehydrating Agent, Silica Gel AMS 3420A
Engine Gray Finishing, Low Baking AMS 2510A
Flexible Plastic Extrusions AMS 3630
Identification of Natural and Synthetic Rubber Materials AMS 2810
Pressure Testing, 10 psi AMS 2601B; 25 psi AMS 2602A; 40 psi AMS 2604B; 55 psi AMS 2605A; 70 psi AMS 2606B; 100 psi AMS 2606A
Synthetic Rubber Sponge (Soft) AMS 3197A; (Medium) AMS 3198A; (Firm) AMS 3199A
Synthetic Rubber
Weather Resistant-Chloroprene Type (25-35) AMS 3207B
Weather Resistant-Chloroprene Type (45-55) AMS 3208B
Weather Resistant-Chloroprene Type (65-75) AMS 3209B
Aromatic Fuel Resistant (55-65) AMS 3212B
Aromatic Fuel Resistant (35-45) AMS 3214A
Weather Resistant-Chloroprene Type (35-45) AMS 3240
Synthetic Rubber and Cork Composition
General Purpose (35-45) AMS 3250
General Purpose (45-55) AMS 3251
General Purpose (55-65) AMS 3252
Steel Tubing (Seamless) Low Carbon (Annealed) AMS 5050B

Society of Automotive Engineers—(Continued)

Steel Tubing (Seamless) .32 — .38 Carbon AMS 5082
Steel Tubing, Corrosion Resistant
Seamless AMS 5560
Welded AMS 5565
Steel Tubing (Seamless for Machined Parts to be Heat-Treated
.55 Ni .50 Cr .25 Mo (.33 — .38C) Cold Finished or Hot Finished
.55 Ni .50 Cr .25 Mo (.38 — .43C) Cold Finished or Hot Finished AMS 6323
Steel Tubing (Seamless for Machined Parts)
.55 Ni .50 Cr .25 Mo (.33 — .38C) Normalized or Heat Treated (90,000 T.S.) AMS 6283
.55 Ni .50 Cr .25 Mo (.33 — .38C) Heat-Treated (125,000 T.S.) AMS 6284
.55 Ni .50 Cr .25 Mo (.33 — .38C) Heat-Treated (150,000 T.S.) AMS 6285
.55 Ni .50 Cr .25 Mo (.38 — .43C) (180,000 T.S.) AMS 6286
1.8 Ni .80 Cr .25 Mo (.38 — .43C) Heat-Treated (200,000 T.S.) AMS 6420
Steel
1 Ni .8 Cr .25 Mo (.38 — .43C) AMS 6342
Chromium Vanadium AMS 6448A
Steel Tubing (Seamless) Round, .55 Ni .5 Cr .2 Mo (.27 — .35C) Heat-Treated (125,000 T.S.) AMS 6531
Zinc Plating AMS 2402A
Zinc Alloy Die Castings AMS 4803

Association of American Railroads (30 Vesey Street New York 7, N. Y.)

Revised Emergency Specifications

Tape Armoring Lead Covered Communication Cable. 1-A-7 EA-2
Houseline, 1-A-92 EA

U. S. Government

(Wherever a price is indicated, the publication may be secured from the Superintendent of Documents, Government Printing Office, Washington, D. C. In other cases, copies may be obtained from the government agency concerned.)

National Bureau of Standards (Washington 25, D. C.)

Commercial Standards

Dress Patterns CS13-44 5¢
Solid-Fuel-Burning Forced-Air Furnaces CS109-44 10¢

Recommended Commercial Standard

Western Hemlock Plywood TS-3836

Simplified Practice Recommendation

Abrasive Grain Sizes, Rev, R118-40 R-118
Files and Rasps (American Pattern, and Straight-and Curved tooth Milled Files) R6-44 10¢

Army Air Forces

List of Material and Process Specifications Bulletin No. 25 November, 1944

Federal Specifications Executive Committee (U. S. Treasury Department, Washington, D. C.)

Federal Specifications

(Copies available from Superintendent of Documents, Government Printing Office, Washington, D. C.)

As a service to Company Members, the ASA maintains a sale file of all Federal Specifications. These specifications can be purchased from the ASA Sales Department.

Asphalt: Emulsion (For) Road Work (superseding SS-A-674, 5-7-35) SS-A-674a November 1, 1944 5¢

Bicycles (Amendment 1) KKK-B-286 November 1, 1944 5¢

Boxes
- Wood-Cleated-Plywood (For Domestic Shipments) (Amendment 1) (superseding E-NN-B-601a, 1-22-42) NN-B-601a October 15, 1944 5¢
- Wood, Wirebound (For Domestic Shipment) (superseding NN-B-631a) NN-B-631b November 1, 1944 5¢

Boxes and outlet-fittings, floor; (for) rigid-steel-conduit and electric-metallic-tubing (steel) (Amendment 1) (superseding E-W-B-616, 4-3-42) W-B-C16 September 15, 1944 5¢

Bronze, aluminum; castings (Amendment 2) QQ-B-671a October 1, 1944 5¢

Bronze; Ingots (superseding QQ-B-701, 5-31-32) QQ-B-701a October 15, 1944 5¢

Bronze, manganese; castings (including manganese-aluminum bronze) (Amendment 1) QQ-B-726c October 1, 1944 5¢

Brushes; marking (Amendment 1) (superseding E-H-B-371, 2-17-42) H-B-371 September 1, 1944 5¢

Carbon-Black; Dry (Paint-Pigment) (new) TT-C-120 October 15, 1944 5¢

Carbon-tetrachloride; technical-grade (Amendment 1) O-C-141 October 15, 1944 5¢

Centrifuges; Hand. (new) GG-C-191 November 15, 1944 5¢

Cloth; Wire, Screen (Amendment 4) RR-C-451a November 15, 1944 5¢

Cushions; Ring, Rubber (Amendment 1) (superseding E-ZZ-C-796, 4-12-43) ZZ-C-796 December 1, 1944 5¢

Cushions; Ring, Cloth-Inserted (Amendment 1) ZZ-C-791 October 15, 1944 5¢

Fittings; cable and conduit (Amendment 2) (superseding Amendment 1 and E-W-F-406, 4-3-42) W-F-406 September 15, 1944 5¢

Furniture and Cabinets: Office, Sectional, Wood (Amendment 1) AA-F-801 December 1, 1944 5¢

Glass; Flat (For) Glazing Purposes (Amendment 1) DD-G-451 November 1, 1944 5¢

Glue; Resin-Type (Liquid and Powder) (new) C-G-496 November 15, 1944 5¢

Goggles; eyecup, protective, impact-resisting (chippers', grinders', etc) (sup. GGG-G-501a) GGG-G-501b September 15, 1944 5¢

Holders
- Mercury (Dental) (new) GG-H-572 December 1, 1944 5¢
- Nerve-Broach, Dental (new) GG-H-577 November 15, 1944 5¢

Indian-red and bright-red (iron-oxide); dry (paint-pigments) (superseding part of TT-I-511) TT-I-511a October 1, 1944 5¢

Insulation; Cotton, Batts (new) HH-I-528 October 15, 1944 5¢

Iron Oxide
- Black, Synthetic, Dry (Paint-Pigment) TT-I-698 November 1, 1944 5¢
- Brown, Synthetic, Dry (Paint-Pigment) TT-I-702 November 1, 1944 5¢

Irons, soldering; electric (Amendment 1) W-I-681a September 15, 1944 5¢

Laundry-Appliances and Wool-Presses (Tailor-Shop) (Amendment 3) OO-L-131c November 15, 1944 5¢

Leather Case (Amendment 1) (superseding E-KK-L-166a, 11-3-44) KK-L-166a November 15, 1944 5¢

Leather
- Lace (Amendment 1) (superseding E-KK-L-201a, 11-6-42) KK-L-201a November 15, 1944 5¢
- Harness, Black and Russet (Vegetable-Tanned) (Amendment 1) (superseding E-KK-L-171a, 7-18-42) KK-L-171a October 15, 1944 5¢

Machines, Coffee-Grinding; Electrically-Operated (Amendment 1) (superseding E-OO-M-23, 9-25-42) OO-M-23 October 15, 1944 5¢

Metallic-Brown; Dry (Paint-Pigment) (new) TT-M-251 October 15, 1944 5¢

Mineral-red (iron-oxide), natural; dry (paint-pigments) (new) TT-M-381 October 1, 1944 5¢

Mortar; Heat-Setting, Refractory (new) HH-M-622 November 1, 1944 5¢

Needles, Hypodermic; (For Luer Syringes) (Amendment 3) GG-N-196 November 15, 1944 5¢

Nickel; Anodes (new) QQ-N-265 November 1, 1944 5¢

Oilers and Fillers; Hand (Amendment 1) (superseding E-RR-O-276, 4-12-43) RR-O-276 December 1, 1944 5¢

Outlet-Bodies; Iron (Cast or Malleable), Cadmium or Zinc-Coated, With Covers and Accessories (For Shore Use) (Amendment 1) (superseding E-W-O-806, 4-3-42) W-O-806 November 1, 1944

Outlet-Boxes, Steel, Cadmium or Zinc-Coated, With Covers and Accessories (Amendment 2) (superseding Amendment 1 and E-W-O-821a, 2-27-42) W-O-821a November 1, 1944 5¢

Packing; fiber, hard, sheet (Amendment 3) HH-P-91 October 15, 1944 5¢

Padlocks (superseding FF-P-101a, and E-FF-P-101a, 5-3-42) FF-P-101b November 15, 1944 5¢

Paint, Varnish, Lacquer, and Related Materials; General Specification for Sampling and Test Methods (superseding TT-P-141, 8-7-41) TT-P-141a 5¢

Pigments-in-oil; paint colors (new) TT-P-381 October 1, 1944 5¢

Pillows; Air, Rubber (Amendment 1) ZZ-P-351 November 1, 1944 5¢

Pins; Cotter, Split (Amendment 2) FF-P-386a November 15, 1944 5¢

Pipe, Bends and Traps; Lead (For) Plumbing and Water-Distribution (new) WW-P-325 November 15, 1944 5¢

Planes (Amendment 1) (superseding E-GGG-P-436, 5-12-42) GGG-P-436 December 1, 1944 5¢

Potassium bromide; (for) photography (new) O-P-551 September 15, 1944 5¢

Potassium iodide; (for) photography (new) O-P-558 September 15, 1944 5¢

Receptacles (convenience outlets); attachment plugs, current-taps, and connectors (Amendment 5) W-R-151 September 15, 1944 5¢

Road and Paving-Materials; General Specifications (Methods for Sampling and Testing) (Amendment 1) SS-R-406a November 1, 1944 5¢

Scythes and snaths (new) GGG-S-186 September 15, 1944 5¢

Sharpeners; Pencil (Amendment 1) GG-S-236 November 15, 1944 5¢

Shovels (scoops, spades, and spoons) (Amendment 2) GGG-S-326 October 15, 1944 5¢

Sienna, burnt and raw; dry (paint-pigments) (new) TT-S-346 October 1, 1944 5¢

Soap, Liquid and Paste; (For) Automobile, Floor, and General Cleaning (Amendment 3) P-S-598 October 15, 1944 5¢

Soda Ash (Amendment 1) O-S-571a November 1, 1944 5¢

Splints; basswood (new) GG-S-621 September 15, 1944 5¢

Sponges; Cellulose-Type (Amendment 3) L-S-626 November 1, 1944 5¢

Switches; Snap, Miscellaneous (new) W-S-890 December 1, 1944 5¢

Tars; (For Use In) Road Construction (Amendment 1) R-T-143 November 1, 1944 5¢

Tires and tubes (inner); bicycle (Amendment 1) ZZ-T-401a October 1, 1944 5¢

Tires; pneumatic, automobile and motorcycle (Amendment 1) (superseding E-ZZ-T-381d, 3-31-42) ZZ-T-381d September 15, 1944 5¢

Torches, Blow; Hand (new) GGG-T-576 October 15, 1944 5¢

Traps; Radiator, Thermostatic, Brass or Bronze, Low-Pressure, 100-Square-Foot Size (For Land Use) (Amendment 2) (superseding Amendment 1 and E-WW-T-696, 3-11-43) WW-T-696 November 1, 1944 5¢

Tubing; Electrical, Metallic (Amendment 1) (superseding E-WW-T-806a, 5-14-42) WW-T-806a October 15, 1944 5¢

Umber, burnt and raw; dry (paint-pigments) (new) TT-U-481 October 1, 1944 5¢

Venetian-Red; Dry (Paint-Pigment) (new) TT-V-226 October 1, 1944 5¢

Vises (Amendment 1) (superseding E-GGG-V-436a, 4-21-43) GGG-V-436a October 15, 1944 5¢

ASA Standards Activities

American Standards

Standards Approved Since Our November Issue

Spring Lock Washers (Carbon Steel) B27.1-1944
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Supplement No. 1 to Code for Pressure Piping, B31.1-1942 B31.1a-1944
Sponsor: American Society of Mechanical Engineers

Standards Being Considered by ASA for Approval

Alloy-Steel Castings for Valves, Flanges, and Fittings for Service at Temperatures from 750 to 1100 F, Specifications for (Revision of ASTM A 157-42; ASA G36.1-1942)

Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for Service at Temperatures from 750 to 1100 F, Specifications for (Revision of ASTM A 182-40; ASA G37.1-1942)

Carbon-Steel Plates for Stationary Boilers and Other Pressure Vessels, Specifications for (Revision of ASTM A 70-42; ASA G29.1-1942)

Carbon-Silicon Steel Plates of Ordinary Tensile Ranges for Fusion-Welded Boilers and Other Pressure Vessels, Specifications for (Revision ASTM A 201-43; ASA G31.1-1943)

Chrome-Manganese Silicon (CMS) Alloy-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (Revision of ASTM A 202-39; ASA G32.1-1943)

Low-Carbon Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (Revision of ASTM A 203-42; ASA G33.1-1942)

Molybdenum-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (Revision of ASTM A 204-42; ASA G34.1-1942)

High Tensile Strength Carbon-Silicon Steel Plates for Boilers and Other Pressure Vessels (Plates 4½ In. and Under in Thickness), Specifications for (Revision of ASTM A 212-39; ASA G35.1-1942)
Sponsor: American Society for Testing Materials

Shrinkage in Laundering of Woven Cotton Cloth, Reaffirmation of American Standard Methods of Test (Reaffirmation of ASTM D 437-36; ASA L10-1936)
Sponsor: American Society for Testing Materials

Wires and Cables, Definitions and General Standards (Revision of C8.1-1932)

Standards Being Considered (Continued)—
Sponsor: Electrical Standards Committee

Standards Being Considered by ASA for Reaffirmation and Reapproval

Basic Sulfate White Lead, Specifications for (ASTM D 82-41; ASA K47-1941)

Concrete Building Brick, Specifications for (ASTM C 55-37; ASA A75.1-1942)

Concrete Masonry Units, Methods of Sampling and Testing (ASTM C 140-39; ASA A84.1-1942)

Concrete Masonry Units for Construction of Catch Basins and Manholes, Specifications for (ASTM C 139-39; ASA A73.1-1942)

Hollow Non-Load-Bearing Concrete Masonry Units, Specifications for (ASTM C 129-39; ASA A80.1-1942)

Mild Steel Plates, Specifications for (ASTM A 10-39; ASA G20-1939)

Sand-Lime Building Brick, Specifications for (ASTM C 73-39; ASA A78.1-1942)

Steel for Bridges and Building, Specifications for (ASTM A 7-42; ASA G24-1942)

Structural Clay Floor Tire, Specifications for (ASTM C 57-39; ASA A77.1-1942)

Structural Clay Tile, Methods of Sampling and Testing (ASTM C 112-36; ASA A83.1-1942)

Structural Rivet Steel, Specifications for (ASTM A 141-39; ASA G21-1939)

Structural Silicon Steel, Specifications for (ASTM A 94-39; ASA G41.1-1942)
Sponsor: American Society for Testing Materials

Standards Submitted to ASA for Approval

Abrasion of Coarse Aggregate by Use of the Los Angeles Machine (Revision of ASTM C 131-39; ASA A37.7-1943)

Ductility of Bituminous Materials (Revision of ASTM D 113-39; ASA A37.11-1943)

Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses (Revision of ASTM A 120-42; ASA G8.7-1943)
Sponsor: American Society for Testing Materials

American War Standards

American War Standards Approved Since Our November Issue

Method of Making Intermodulation Tests on Variable Density 16-Mm Sound Motion Picture Prints Z52.15-1944

Method of Making Cross-Modulation Tests on Variable Area 16-Mm Sound Motion Picture Prints Z52.39-1944

War Standards Under Way

Color Code for Lubrication of Machinery Z47

Cylindrical Fits B4.1

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Finishers of Textile Fabrics Are New ASA Associate Member

The National Association of Finishers of Textile Fabrics, new Associate Member of the American Standards Association, was formed in 1914. Membership is made up of finishing plants, which process woven grey cloth varying widely in weight and construction and in requirements for diversified finishes.

The Association works closely with the National Bureau of Standards and other organizations in formulating standard test methods for textiles and has played an important part in the work of the Federal Trade Commission and the Commission of Fair Trade Practice Rules on proposed rules for color fastness of textiles.

Officers of the Association are: R. W. Arrington, president; W. R. MacIntyre, chairman of Executive Committee; L. H. Ballou, vice-president; William Berry, vice-president; Miss Alice C. Moore, secretary-treasurer.

Radio Engineers Elect Everitt President

The Institute of Radio Engineers announces election of Dr. William L. Everitt of Washington, one of America's foremost authorities on radio and electronics, as president. Dr. Everitt, who is chief of the Operational Research Branch, Office of the Chief Signal Officer of the United States Army, succeeds Professor Hubert M. Turner of the Department of Electrical Engineering, Yale University. Dr. Everitt, who has been directing important research for the Army at Washington since 1942, was recently appointed professor and head of the Department of Electrical Engineering at the University of Illinois.

Dr. Hendrik J. Van der Bijl of Johannesburg, Union of South Africa, was elected vice-president. Dr. Van der Bijl has been a Fellow of the Institute since 1928. He is chairman of the Electricity Supply Commission, the South African Iron and Steel Industrial Corporation, Ltd., and the Industrial Development Corporation of South Africa, Ltd.; chairman and managing director of African Metals Corporation, Ltd.; director of the South African Board Barclays Bank; Director General of War Supplies; and Chancellor of the University of Pretoria.

The Institute is a Member-Body of the American Standards Association.

Dr. Torres of Brazil Visits United States

Dr. Ary F. Torres, president of ABNT (the Brazilian Standards Association), is visiting the United States, having served as one of the Brazilian delegates to the International Business Conference at Rye, New York, November 10. The conference was under the auspices of the United States Chamber of Commerce, the National Association of Manufacturers, and the National Foreign Trade Council.

While he is in the United States, Dr. Torres is also conferring with the Inter-American Development Commission, concerning a proposal to organize a Pan American Committee on Technical Standards.

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